

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.95
Test oil : ISO 4113

Combination No. : 0 402 846 067

Injection pump
Pump designation : PE6P120A320RS8015
EP type number : 0 412 826 016

Governor
Governor design. : RQV300...1025PA1225
Governor no. : 0 421 814 151

Cust. part No. : 11031773-P01

Customer-spec. information
Customer : VME
Motor : TD122KAE
Power KW : 243.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

Barrel no. : 1

BASIC SETTING

Rack travel in mm : 3.80
Tolerance mm : ± 0.30

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1095

guide sleeve
travel mm : 7.90
Tolerance mm : \pm 0.25

Rated speed rpm : 325
guide sleeve
travel mm : 2.09
Tolerance mm : \pm 0.25

Rated speed rpm : 1028
guide sleeve
travel mm : 6.85
Tolerance mm : \pm 0.25

Rated speed rpm : 387
guide sleeve
travel mm : 2.96
Tolerance mm : \pm 0.25

Rated speed rpm : 437
guide sleeve
travel mm : 3.59
Tolerance mm : \pm 0.25

Rated speed rpm : 520
guide sleeve
travel mm : 4.67
Tolerance mm : \pm 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1180

Rack travel in mm : 9.50
Tolerance mm : \pm 2.00

CONTROL LEVER

control lever
position degree : 59.0
tolerance degree : \pm 4.0

control lever
position degree : 123.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 8.50
Rated speed rpm : 1085

A02

Tolerance 1/min : \pm 5
rack travel mm : 4.00
Rated speed rpm : 1135
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

control lever
position degree : 10.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 225
CRT mm min. : $>$ 5.40

Testing:

Rated speed rpm : 325
rack travel mm : 3.80
Tolerance mm : \pm 0.30

Rated speed rpm : 375

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 9.50
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 7.80
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 520
rack travel mm : 1.40
Tolerance mm : \pm 0.20

Pressure hPa : 300
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rack travel in mm : 3.80
Tolerance mm : \pm 0.30

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.01.96
Test oil : ISO 4113
Combination No. : 0 401 496 001
Injection pump
Pump designation : PE6R120/720RS1502
EP type number : 0 411 426 002
Governor
Governor design. : RE31
Governor no. : 0 421 890 200

Cust. part No. : 1556156
: -P07 v. 12/95

Customer-spec. information
Customer : VOLVO-TRUCK
Motor : TD 163 ES,EJ
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 078
Inlet press. bar : 2.5
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 5.40
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 0.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery mark
Barrel no. : 1

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR
POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position
(P, R and H pump)

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

Stop position
(M pump)

Uact V : 0,720
Tolerance Volt : +/- 0,065
CRT mm : 1,00

Starting position
(M pump)

Uact V : 4,500
Tolerance Volt : +/- 0,115
CRT mm : 19,00
Tolerance mm : +/- 0,80

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950
Uact V : 2.750
Del. quantity
cm³/1000 strokes : 295.0
Tolerance
cm³/1000 strokes : +/- 3.0
Check tolerance
cm³/1000S. : +/- 6.0
Spreed
Tolerance
cm³/1000 strokes : 9.0
Check tolerance
cm³/1000S. : 13.0

Rated speed rpm : 950
Uact V : 2.000
Del. quantity
cm³/1000 strokes : 163.0
Tolerance
cm³/1000 strokes : +/- 3.0
Check tolerance
cm³/1000S. : +/- 6.0

TEST POINT L1

Rated speed rpm : 300
Uact V : 1.530
Tolerance Volt : +/- 0.060

Check tolerance
Volt : ± 0.060
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : ± 3.0
Speed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.07.96
Test oil : ISO 4113

Combination No. : 0 400 196 003

Injection pump
Pump designation : PES6M60C320RS206
EP type number : 0 410 066 001

Governor
Governor design. : RE22
Governor no. : 0 420 090 004

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM 606 D30 LA
Power KW : 130.0

TEST BENCH REQUIREMENTS

Inlet line : 1.1;

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 0 688 901 111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

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x inside diameter : 2.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 1.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 17.00
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 17.00
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

Barrel no. : 1

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min⁻¹, U_{act} = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position
(P, R and H pump)

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

Stop position
(M pump)

Uact V : 0,720
Tolerance Volt : +/- 0,065

A08

CRT mm : 1,00

Starting position
(M pump)

Uact V : 4,500
Tolerance Volt : +/- 0,115
CRT mm : 19,00
Tolerance mm : +/- 0,80

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1000
Uact V : 3.250
Del. quantity
cm3/1000 strokes : 60.0
Tolerance
cm3/1000 strokes : +/- 0.5
Check tolerance
cm3/1000S. : +/- 2.0
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 2200
Uact V : 3.250
Del. quantity
cm3/1000 strokes : 64.0
Check tolerance
cm3/1000S. : +/- 2.0
Spreed
Check tolerance
cm3/1000S. : 3.5

Rated speed rpm	:	500
Uact V	:	3.250
Del. quantity		
cm ³ /1000 strokes	:	55.0
Check tolerance		
cm ³ /1000S.	:	± 2.0
Speed		
Check tolerance		
cm ³ /1000S.	:	3.0

TEST POINT L1

Rated speed rpm	:	310
Uact V	:	1.950
Del. quantity		
cm ³ /1000 strokes	:	11.5
Tolerance		
cm ³ /1000 strokes	:	± 2.2
Speed		
Tolerance		
cm ³ /1000 strokes	:	1.5
Check tolerance		
cm ³ /1000S.	:	2.0

STARTING FUEL DELIVERY

Rated speed rpm	:	100
Uact V	:	3.250
Del. quantity		
cm ³ /1000 strokes	:	53.2
Check tolerance		
cm ³ /1000S.	:	± 2.5
Speed		
Tolerance		
cm ³ /1000 strokes	:	8.0
Check tolerance		
cm ³ /1000S.	:	8.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.06.96
Test oil : ISO 4113

Combination No. : 0 402 648 787

Injection pump
Pump designation : PE8P120A320LS7899
EP type number : 0 412 628 916

Governor
Governor design. : RQV350...1050PA1308
Governor no. : 0 421 814 181

Cust. part No. : 0250742502

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 405.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

A10

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.53
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 15.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 282.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.70
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spreed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1111
guide sleeve
travel mm : 8.58
Tolerance mm : + 0.15

Rated speed rpm : 350
guide sleeve
travel mm : 2.05
Tolerance mm : + 0.20

Rated speed rpm : 1640
guide sleeve
travel mm : 25.13
Tolerance mm : + 0.25

Rated speed rpm : 830
guide sleeve
travel mm : 6.20
Tolerance mm : + 0.25

Rated speed rpm : 1183
guide sleeve
travel mm : 10.00

Tolerance mm : + 0.25

Rated speed rpm : 1280

guide sleeve

travel mm : 11.50

Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever

position degree : - 1

Rated speed rpm : 1136

Rack travel in mm : 13.50

Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure

hPa : 1300

Del. quantity

cm³/1000 strokes : 282.0

Tolerance

cm³/1000 strokes : + 1.0

Check tolerance

cm³/1000S. : + 4.0

Spreed

Tolerance

cm³/1000 strokes : 6.0

Check tolerance

cm³/1000S. : 9.0

CONTROL LEVER

control lever

position degree : 121.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 14.00

Rated speed rpm : 1098

Tolerance 1/min : + 8

rack travel mm : 4.00

Rated speed rpm : 1175

Tolerance 1/min : + 15

rack travel mm : 0.75

Tolerance mm : + 0.75

Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 68.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
CRT mm min. : $>$ 7.54

Testing:

Rated speed rpm : 350
rack travel mm : 5.70
Tolerance mm : \pm 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 15.00
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 15.00
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Pressure hPa : 500
rack travel mm : 1.40
Tolerance mm : \pm 0.05

Pressure hPa : 1000
rack travel mm : 6.00
Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 270

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 298.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

REDUCED QUANTITY

Aneroid pressure
hPa : 1300
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 225.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 280.0

Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.70
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.10.94
Test oil : ISO 4113
Combination No. : 0 402 036 744
Injection pump
Pump designation : PES6P120A720/3LS3255
EP type number : 0 412 026 739

Governor
Governor design. : RQV300...1000PA876
: -12
Governor no. : 0 421 813 897

Cust. part No. : 3-7039

Customer-spec. information
Customer : MAN
Motor : D2866LF05
Power KW : 272.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1 688 901 019
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 067
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 15.00
Tolerance mm : ± 1.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.15
Tolerance mm : ± 0.05

Rated speed rpm : 300

Rack travel in mm : 5.00
Tolerance mm : ± 0.10

Del. quantity
 cm³/1000 strokes : 20.0
 Tolerance
 cm³/1000 strokes : ± 3.0
 Check tolerance
 cm³/1000S. : ± 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1100

 Rack travel in mm : 16.50
 Tolerance mm : ± 1.30

CONTROL LEVER

control lever
 position degree : 302.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 14.10
 Rated speed rpm : 1045
 Tolerance 1/min : ± 5

rack travel mm : 4.00
 Rated speed rpm : 1165
 Tolerance 1/min : ± 15

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 258.0
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
 CRT mm min. : > 6.50

Testing:

Rated speed rpm : 300
 rack travel mm : 5.00
 Tolerance mm : ± 0.10

Rated speed rpm : 340

TORQUE CONTROL

Rated speed rpm : 700
 rack travel mm : 15.15
 Tolerance mm : ± 0.05

Rated speed rpm : 1000
 rack travel mm : 15.15
 Tolerance mm : ± 0.05

Rated speed rpm : 700
 rack travel mm : 8.00
 Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 1200
 rack travel mm : 15.15
 Tolerance mm : ± 0.05

Rated speed rpm : 500
 Pressure hPa : -
 rack travel mm : 12.10
 Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 500

 Pressure hPa : 470
 rack travel mm : 14.20
 Tolerance mm : ± 0.20

Pressure hPa : 110
 rack travel mm : 12.35
 Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100

Rated speed rpm : < 220

Check
speed 1/min : > 80

Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 245.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 94.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0
Spreed
Tolerance
cm³/1000 strokes : 10.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 139.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.06.94
Test oil : ISO 4113

Combination No. : 0 402 736 828

Injection pump
Pump designation : PES6P120A720/3LS7251
EP type number : 0 412 726 860

Governor
Governor design. : RQV300...1000PA960
: -7K
Governor no. : 0 421 815 307

Cust. part No. : 3-7207

Customer-spec. information
Customer : MAN
Motor : D2866LF09
Power KW : 309.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 15.50
Tolerance mm : ± 1.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 296.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 14.0

Rated speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 32.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1058
guide sleeve
travel mm : 10.48
Tolerance mm : ± 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 2.16
Tolerance mm : ± 0.25

Rated speed rpm : 749
guide sleeve
travel mm : 6.97
Tolerance mm : ± 0.25

Rated speed rpm : 293
guide sleeve
travel mm : 1.97

Tolerance mm : ± 0.25

Rated speed rpm : 343
guide sleeve
travel mm : 2.62
Tolerance mm : ± 0.25

Rated speed rpm : 450
guide sleeve
travel mm : 3.71
Tolerance mm : ± 0.25

Rated speed rpm : 1260
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1120

Rack travel in mm : 12.50
Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 296.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

CONTROL LEVER

control lever
position degree : 300.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 12.50
Rated speed rpm : 1045
Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1150
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 256.0
 tolerance degree : + 4.0
 Setting point w/out bumper spring
 Rated speed rpm : 200
 CRT mm min. : > 6.70

Testing:

Rated speed rpm : 300
 rack travel mm : 5.20
 Tolerance mm : + 0.10
 Rated speed rpm : 360

TORQUE CONTROL

Rated speed rpm : 900
 rack travel mm : 13.95
 Tolerance mm : + 0.05

Rated speed rpm : 1000
 rack travel mm : 13.50
 Tolerance mm : + 0.10

Rated speed rpm : 750
 rack travel mm : 13.40
 Tolerance mm : + 0.10

Rated speed rpm : 750
 rack travel mm : 6.50
 Tolerance mm : + 0.10

Rated speed rpm : 400
 rack travel mm : 12.00
 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 900
 Pressure hPa : 1200
 rack travel mm : 13.95
 Tolerance mm : + 0.05

Rated speed rpm : 900
 Pressure hPa : -
 rack travel mm : 9.10
 Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 900
 Pressure hPa : 720
 rack travel mm : 11.95
 Tolerance mm : + 0.15
 Pressure hPa : 220
 rack travel mm : 9.45
 Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
 Rated speed rpm : < 240

Check
 speed 1/min : > 80
 Check
 speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1200
 Rated speed rpm : 1000
 Del. quantity
 cm3/1000 strokes : 269.0
 Tolerance
 cm3/1000 strokes : + 3.0
 Check tolerance
 cm3/1000S. : + 6.0

Aneroid pressure
 hPa : 1200
 Rated speed rpm : 750
 Del. quantity
 cm3/1000 strokes : 287.0
 Tolerance
 cm3/1000 strokes : + 3.0
 Check tolerance
 cm3/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 109.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 169.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 32.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.06.94
Test oil : ISO 4113

Combination No. : 0 402 736 849

Injection pump
Pump designation : PES6P120A720/3LS7251
EP type number : 0 412 726 860

Governor
Governor design. : RQV300...1000PA962
: -12K
Governor no. : 0 421 815 407

Cust. part No. : 3-7373

Customer-spec. information
Customer : MAN
Motor : D2866LF09
Power KW : 398.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 15.50
Tolerance mm : ± 1.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 294.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 14.0

Rated speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 32.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1061
guide sleeve
travel mm : 10.46
Tolerance mm : ± 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 1.88
Tolerance mm : ± 0.25

Rated speed rpm : 764
guide sleeve
travel mm : 6.96
Tolerance mm : ± 0.25

Rated speed rpm : 305
guide sleeve
travel mm : 1.88

Tolerance mm : ± 0.25

Rated speed rpm : 355
guide sleeve
travel mm : 2.53
Tolerance mm : ± 0.25

Rated speed rpm : 470
guide sleeve
travel mm : 3.67
Tolerance mm : ± 0.25

Rated speed rpm : 1260
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1120

Rack travel in mm : 12.50
Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1300
Del. quantity
cm³/1000 strokes : 294.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

CONTROL LEVER

control lever
position degree : 300.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 12.40
Rated speed rpm : 1045
Tolerance 1/min : ± 5
rack travel mm : 4.00

Rated speed rpm : 1140
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 252.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 6.70

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : + 0.10

Rated speed rpm : 330

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 13.95
Tolerance mm : + 0.05

Rated speed rpm : 1000
rack travel mm : 13.50
Tolerance mm : + 0.10

Rated speed rpm : 750
rack travel mm : 13.40
Tolerance mm : + 0.10

Rated speed rpm : 750
rack travel mm : 6.50
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1300
rack travel mm : 13.95
Tolerance mm : + 0.05

A23

Rated speed rpm : 900
Pressure hPa : -
rack travel mm : 9.10
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 900

Pressure hPa : 720
rack travel mm : 11.90
Tolerance mm : + 0.20

Pressure hPa : 220
rack travel mm : 9.45
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 240

Check
speed 1/min : > 80
Check
speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 269.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : 1300
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 287.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 107.0

Tolerance
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000S. : + 8.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 169.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 32.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.12.96
Test oil : ISO 4113

Combination No. : 0 400 195 001

Injection pump
Pump designation : PES5M55C320RS202
EP type number : 0 410 055 971

Governor
Governor design. : RE
Governor no. : 0 420 090 002

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : UM 605
Power KW : 83.0

TEST BENCH REQUIREMENTS

Inlet line : 1.1;

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 1.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 17.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

Start of delivery blocking

°NW after s.o.d. : 16.50
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

Barrel no. : 1

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR
POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position
(P, R and H pump)

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

Stop position
(M pump)

Uact V : 0,720
Tolerance Volt : +/- 0,065
CRT mm : 1,00

Starting position
(M pump)

Uact V : 4,500
Tolerance Volt : +/- 0,115
CRT mm : 19,00
Tolerance mm : +/- 0,80

ENGINE-SPEED SENSOR
(ALL P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1000
Uact V : 3.250
Del. quantity
cm3/1000 strokes : 35.5
Tolerance
cm3/1000 strokes : +/- 0.5
Check tolerance
cm3/1000S. : +/- 1.2
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 2500
Uact V : 3.250
Del. quantity
cm3/1000 strokes : 41.6
Check tolerance
cm3/1000S. : +/- 1.5
Spreed
Check tolerance
cm3/1000S. : 3.3

Rated speed rpm : 500
Uact V : 3.250

Del. quantity
cm³/1000 strokes : 33.2
Check tolerance
cm³/1000S. : ± 1.2
Spreed
Check tolerance
cm³/1000S. : 3.0

TEST POINT L1

Rated speed rpm : 315
Uact V : 2.200
Del. quantity
cm³/1000 strokes : 7.3
Spreed
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 1.8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 4.000
Del. quantity
cm³/1000 strokes : 52.2
Check tolerance
cm³/1000S. : ± 3.5
Spreed
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.12.96
Test oil : ISO 4113

Combination No. : 0 400 195 002

Injection pump
Pump designation : PES5M60C320RS205
EP type number : 0 410 065 001

Governor
Governor design. : RE22
Governor no. : 0 420 090 002

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM 605 D 25 LA
Power kW : 110.0

TEST BENCH REQUIREMENTS

Inlet line : 1.1;

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 0 688 901 111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 1.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 17.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

Start of delivery blocking

°NW after s.o.d. : 17.00
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

Barrel no. : 1

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min⁻¹, U_{act} = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR
POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position
(P, R and H pump)

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

Stop position
(M pump)

Uact V : 0,720
Tolerance Volt : +/- 0,065
CRT mm : 1,00

Starting position
(M pump)

Uact V : 4,500
Tolerance Volt : +/- 0,115
CRT mm : 19,00
Tolerance mm : +/- 0,80

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1000
Uact V : 3.250
Del. quantity
cm³/1000 strokes : 58.0
Tolerance
cm³/1000 strokes : +/- 0.5
Check tolerance
cm³/1000S. : +/- 1.4
Speed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 2200
Uact V : 3.250
Del. quantity
cm³/1000 strokes : 62.4
Check tolerance
cm³/1000S. : +/- 1.5
Speed
Check tolerance
cm³/1000S. : 3.3

Rated speed rpm : 500
Uact V : 3.250

Del. quantity
cm³/1000 strokes : 53.5
Check tolerance
cm³/1000S. : ± 1.4
Spreed
Check tolerance
cm³/1000S. : 3.0

TEST POINT L1

Rated speed rpm : 340
Uact V : 1.950
Del. quantity
cm³/1000 strokes : 11.2
Spreed
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 2.2

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 3.250
Del. quantity
cm³/1000 strokes : 52.0
Check tolerance
cm³/1000S. : ± 3.5
Spreed
Check tolerance
cm³/1000S. : 6.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.12.96
Test oil : ISO 4113

Combination No. : 0 400 195 004

Injection pump
Pump designation : PES5M60C320RS205
EP type number : 0 410 065 001

Governor
Governor design. : RE22
Governor no. : 0 420 090 003

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM 605 D 25 LA
Power KW : 110.0

TEST BENCH REQUIREMENTS

Inlet line : 1.1;

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 0 688 901 111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 1.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 17.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

Start of delivery blocking

*NW after s.o.d. : 17.00
Tolerance : ± 0.20
Check
tolerance *NW : ± 0.30

Barrel no. : 1

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR
POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position
(P, R and H pump)

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

Stop position
(M pump)

Uact V : 0,720
Tolerance Volt : +/- 0,065
CRT mm : 1,00

Starting position
(M pump)

Uact V : 4,500
Tolerance Volt : +/- 0,115
CRT mm : 19,00
Tolerance mm : +/- 0,80

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1000
Uact V : 3.250
Del. quantity
cm³/1000 strokes : 58.0
Tolerance
cm³/1000 strokes : +/- 0.5
Check tolerance
cm³/1000S. : +/- 1.4
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 2200
Uact V : 3.250
Del. quantity
cm³/1000 strokes : 62.4
Check tolerance
cm³/1000S. : +/- 1.5
Spreed
Check tolerance
cm³/1000S. : 3.3

Rated speed rpm : 500
Uact V : 3.250

Del. quantity
cm³/1000 strokes : 53.5
Check tolerance
cm³/1000S. : ± 1.4
Spreed
Check tolerance
cm³/1000S. : 3.0

TEST POINT L1

Rated speed rpm : 340
Uact V : 1.950
Del. quantity
cm³/1000 strokes : 11.2
Spreed
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 2.2

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 3.250
Del. quantity
cm³/1000 strokes : 52.0
Check tolerance
cm³/1000S. : ± 3.5
Spreed
Check tolerance
cm³/1000S. : 6.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.12.96
Test oil : ISO 4113

Combination No. : 0 400 196 002

Injection pump
Pump designation : PES6M55C320RS204
EP type number : 0 410 056 969

Governor
Governor design. : RE22
Governor no. : 0 420 090 002

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM 606
Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet Line : 1.1;

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 0 688 901 111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 1.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.05

Rack travel in mm : 17.00
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 16.50
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

Barrel no. : 1

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position
(P, R and H pump)

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

Stop position
(M pump)

Uact V : 0,720
Tolerance Volt : +/- 0,065

CRT mm : 1,00

Starting position
(M pump)

Uact V : 4,500
Tolerance Volt : +/- 0,115
CRT mm : 19,00
Tolerance mm : +/- 0,80

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1000
Uact V : 3.250
Del. quantity
cm³/1000 strokes : 35.5
Tolerance
cm³/1000 strokes : +/- 0.5
Check tolerance
cm³/1000S. : +/- 1.2
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 2500
Uact V : 3.250
Del. quantity
cm³/1000 strokes : 41.6
Check tolerance
cm³/1000S. : +/- 1.5
Spreed
Check tolerance
cm³/1000S. : 3.3

Rated speed rpm	:	500
Uact V	:	3.250
Del. quantity		
cm ³ /1000 strokes	:	33.2
Check tolerance		
cm ³ /1000S.	:	± 1.2
Spreed		
Check tolerance		
cm ³ /1000S.	:	3.0

TEST POINT L1

Rated speed rpm	:	330
Uact V	:	2.200
Del. quantity		
cm ³ /1000 strokes	:	7.3
Spreed		
Tolerance		
cm ³ /1000 strokes	:	1.0
Check tolerance		
cm ³ /1000S.	:	1.8

STARTING FUEL DELIVERY

Rated speed rpm	:	100
Uact V	:	4.000
Del. quantity		
cm ³ /1000 strokes	:	52.2
Check tolerance		
cm ³ /1000S.	:	± 3.5
Spreed		
Check tolerance		
cm ³ /1000S.	:	5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.01.97
Test oil : ISO 4113
Combination No. : 0 400 836 030
Injection pump
Pump designation : PES6A95D410LS2542-1
EP type number : 0 410 896 912
Governor
Governor design. : RQV250...1100AB1177L
Governor no. : 0 420 212 162

Cust. part No. :

Customer-spec. information
Customer : MAN
Motor : D2566 M/MF
Power KW : 177.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 000
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 12.05
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 125.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0
Rated speed rpm : 250
Rack travel in mm : 6.80
Tolerance mm : ± 0.10

Del. quantity
 cm³/1000 strokes : 11.5
 Tolerance
 cm³/1000 strokes : ± 2.5
 Check tolerance
 cm³/1000S. : ± 5.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1200
 guide sleeve
 travel mm : 9.70
 Tolerance mm : ± 0.10

Rated speed rpm : 250
 guide sleeve
 travel mm : 1.15
 Tolerance mm : ± 0.05

Rated speed rpm : 375
 guide sleeve
 travel mm : 2.25
 Tolerance mm : ± 0.15

Rated speed rpm : 500
 guide sleeve
 travel mm : 3.65
 Tolerance mm : ± 0.15

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1140

Rack travel in mm : 16.50
 Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 125.5
 Tolerance
 cm³/1000 strokes : ± 1.0

Check tolerance
 cm³/1000S. : ± 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 107.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.00
 Rated speed rpm : 1145
 Tolerance 1/min : ± 5

rack travel mm : 4.00
 Rated speed rpm : 1195
 Tolerance 1/min : ± 15

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 73.0
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100
 CRT mm min. : > 8.20

Testing:

Rated speed rpm : 250
 rack travel mm : 6.80
 Tolerance mm : ± 0.10

rack travel mm : 2.00
 Rated speed rpm : 380
 Tolerance 1/min : ± 35

TORQUE CONTROL

Rated speed rpm : 1100
 rack travel mm : 12.05
 Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 12.10
Tolerance mm : \pm 0.10

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 170

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 190

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 110.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.5

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 114.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 15.70
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 127.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

B11

Rated speed rpm : 250

Rack travel in mm : 6.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 11.5
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.02.97
Test oil : ISO 4113
Combination No. : 0 400 874 250
Injection pump
Pump designation : PES4A95D32ORS2807
EP type number : 0 410 894 994
Governor
Governor design. : RSV375...1125A2C2178
: -7R
Governor no. : 0 420 233 279
Cust. part No. :

Customer-spec. information
Customer : VALMET
Motor : 420 DS
Power KW : 75.0

TEST BENCH REQUIREMENTS

Inlet line : 2.3
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 2- 4- 3
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1
Beginning of delivery difference
and maximum rack
travel : 9.00
Tolerance mm : ± 0.50
Difference ° CS : 5.00

BASIC SETTING

Rated speed rpm : 1125
Rack travel in mm : 11.25
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 87.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 375

Rack travel in mm : 5.60
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spread
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1125
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 87.5
Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 101.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.20
Rated speed rpm : 1170
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1250
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1410

rack travel mm : 4.00
Rated speed rpm : 1260
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 75.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 375
rack travel mm : 5.10
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 375
rack travel mm : 5.60
Tolerance mm : + 0.10

rack travel mm : 2.00

Rated speed rpm : 495
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1125
rack travel mm : 11.25
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 11.65
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.60
Tolerance mm : \pm 0.05

Rated speed rpm : 965
rack travel mm : 11.35
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 87.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Rated speed rpm : 375
Rack travel in mm : 5.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.01.97
Test oil : ISO 4113

Combination No. : 0 402 646 970

Injection pump
Pump designation : PE6P120A320RS7248
: -10Y
EP type number : 0 412 626 902

Governor
Governor design. : RQV275...1150PA986
Governor no. : 0 421 813 920

Cust. part No. : 1248046/4

Customer-spec. information
Customer : DAF
Motor : RS 180 L
Power KW : 180.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 130
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.75
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 10.75
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 147.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 4.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1206
guide sleeve
travel mm : 8.25
Tolerance mm : \pm 0.20

Rated speed rpm : 275
guide sleeve
travel mm : 1.44
Tolerance mm : \pm 0.15

Rated speed rpm : 799
guide sleeve
travel mm : 5.21
Tolerance mm : \pm 0.25

Rated speed rpm : 315
guide sleeve
travel mm : 1.98
Tolerance mm : \pm 0.25

Rated speed rpm : 365
guide sleeve
travel mm : 2.52
Tolerance mm : \pm 0.25

Rated speed rpm : 450
guide sleeve
travel mm : 3.07
Tolerance mm : \pm 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1340

Rack travel in mm : 9.70
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 147.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 9.75

Rated speed rpm : 1182
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1280
Tolerance 1/min : + 15

rack travel mm : 0.70
Tolerance mm : + 0.70
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 83.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : > 7.40

Testing:

Rated speed rpm : 275
rack travel mm : 4.70
Tolerance mm : + 0.10

Rated speed rpm : 340

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 10.75
Tolerance mm : + 0.05

Rated speed rpm : 1150
rack travel mm : 10.75
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 10.75
Tolerance mm : + 0.05

Rated speed rpm : 600
Pressure hPa : -
rack travel mm : 9.50

Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 600

Pressure hPa : 260
rack travel mm : 10.35
Tolerance mm : + 0.05

Pressure hPa : 190
rack travel mm : 9.90
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 121.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000s. : + 4.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 4.70
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 16.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000s. : + 6.0

Spread
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.02.97
Test oil : ISO 4113

Combination No. : 0 400 876 407

Injection pump
Pump designation : PES6A95D410RS2835
EP type number : 0 410 896 896

Governor
Governor design. : RSV650...1050A8C2263
: -3L
Governor no. : 0 420 232 586

Cust. part No. : 87 800 684

Customer-spec. information
Customer : NH
Motor : 7.5 L
Power kW : 138.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 193

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 14.00
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 141.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spreed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 650

Rack travel in mm : 5.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 22.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 3.5

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : 800
Del. quantity
cm³/1000 strokes : 141.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 91.0
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1092
rack travel mm : 11.80

Rated speed rpm : 1117
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1250

Rated speed rpm : 1093
rack travel mm : 11.80

Rated speed rpm : 1118
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1250

Rated speed rpm : 1094
rack travel mm : 11.80

Rated speed rpm : 1119
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1250

Rated speed rpm : 1095
rack travel mm : 11.80

Rated speed rpm : 1120
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1250

Rated speed rpm : 1096
rack travel mm : 11.80

Rated speed rpm : 1121
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1250

Rated speed rpm : 1097
rack travel mm : 11.80

Rated speed rpm : 1122
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 650
rack travel mm : 5.00
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 650
rack travel mm : 5.50
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 780
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 14.00

Tolerance mm : \pm 0.10

Rated speed rpm : 1050
rack travel mm : 12.50
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
rack travel mm : 12.80
Tolerance mm : \pm 0.10

Rated speed rpm : 960
rack travel mm : 13.60
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure nPa : 800
rack travel mm : 14.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.00
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 325
rack travel mm : 11.15
Tolerance mm : \pm 0.20

Pressure hPa : 550
rack travel mm : 13.45
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 77.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 197.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000s. : \pm 13.0

LOW IDLE

Rated speed rpm : 650
Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 3.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000s. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.04.97
Test oil : ISO 4113

Combination No. : 0 401 876 796

Injection pump
Pump designation : PE6P120A320LS3815
: -13
EP type number : 0 411 826 782

Governor
Governor design. : RSV675...1050POA820
: -12
Governor no. : 0 421 833 401

Cust. part No. : 0240745302

Customer-spec. information
Customer : MB-NFZ
Motor : OM441A
Power KW : 162.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 1080

Rack travel in mm : 10.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 146.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 675

Rack travel in mm : 3.40

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1080
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 146.0
Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 93.0
tolerance degree : + 4.0

LOW IDLE

control lever
position degree : 77.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 675
rack travel mm : 3.40
Tolerance mm : + 0.10

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1080
rack travel mm : 10.00
Tolerance mm : + 0.05

Rated speed rpm : 700
rack travel mm : 11.30
Tolerance mm : + 0.10

Rated speed rpm : 925
rack travel mm : 10.60
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 177.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 675
Rack travel in mm : 3.40
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.04.97

Test oil : ISO 4113

Combination No. : 0 402 736 810

Injection pump

Pump designation : PES6P110A12ORS7213

EP type number : 0 412 716 804

Governor

Governor design. : RQV400...1250PA964

: -2K

Governor no. : 0 421 815 254

Cust. part No. : 3921777

Customer-spec. information

Customer : CDC

Motor : 6BTA-A

Power KW : 141.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity

min. l/h : 120

Tolerance l/h : ± 5.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0

Tolerance bar : ± 1.0

Prestroke mm : 4.40

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Start of delivery blocking

*NW after s.o.d. : 6.00

Tolerance : ± 0.10

Check

tolerance *NW : ± 0.23

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 14.85
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 163.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 5.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 36.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 1450

Rack travel in mm : 13.80
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 163.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 63.0
tolerance degree : + 4.0

control lever
position degree : 119.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.80
Rated speed rpm : 1300
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1475
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 71.0
tolerance degree : + 4.0

control lever
position degree : 15.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 275

CRT mm min. : > 7.20

Testing:

Rated speed rpm : 400

rack travel mm : 5.50
Tolerance mm : \pm 0.10
Rated speed rpm : 423

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 14.85
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 13.10
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200
rack travel mm : 14.85
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 1250
Pressure hPa : 690
rack travel mm : 13.40
Tolerance mm : \pm 0.20

Pressure hPa : 365
rack travel mm : 10.25
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 290

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 161.0

Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 97.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 36.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.04.97
Test oil : ISO 4113

Combination No. : 0 402 736 811

Injection pump
Pump designation : PES6P110A120RS7213
EP type number : 0 412 716 804

Governor
Governor design. : RQV400...1250PA964
: -3K
Governor no. : 0 421 815 255

Cust. part No. : 3921776

Customer-spec. information
Customer : CDC
Motor : 6BTA-A
Power KW : 147.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 120
Tolerance l/h : ± 5.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 6.00
Tolerance : ± 0.10
Check
tolerance *NW : ± 0.23

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 14.85
Tolerance mm : ± 0.05

Rack travel in mm : 5.60
Tolerance mm : \pm 0.10

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 13.80
Rated speed rpm : 1295
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1475
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 16.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 275

CRT mm min. : $>$ 7.20

Testing:

Rated speed rpm : 400
rack travel mm : 5.60
Tolerance mm : \pm 0.10

CO2

Rated speed rpm : 423

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 14.85
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 13.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200
rack travel mm : 14.85
Tolerance mm : \pm 0.05

Rated speed rpm : 1250
Pressure hPa : -
rack travel mm : 8.40
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 755
rack travel mm : 13.90
Tolerance mm : \pm 0.20

Pressure hPa : 410
rack travel mm : 10.65
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 290

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800

Del. quantity
cm³/1000 strokes : 159.5
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 92.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.40
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 25.0

LOW IDLE

Rack travel in mm : 5.60
Tolerance mm : ± 0.10

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.04.97
Test oil : ISO 4113

Combination No. : 0 402 736 812

Injection pump
Pump designation : PES6P110A120RS7214
EP type number : 0 412 716 805

Governor
Governor design. : RQV350...1200PA964
: -4K
Governor no. : 0 421 815 256

Cust. part No. : 3921774

Customer-spec. information
Customer : CDC
Motor : 6CTA-A
Power KW : 156.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 120
Tolerance l/h : ± 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 5.50
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.35

Tolerance mm : \pm 0.05

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1260

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 11.30
Rated speed rpm : 1250
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1380
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 65.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 275

CRT mm min. : $>$ 7.20

C05

Testing:

Rated speed rpm : 350
rack travel mm : 5.50
Tolerance mm : \pm 0.10

Rated speed rpm : 423

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 650
rack travel mm : 11.10
Tolerance mm : \pm 0.20

Rated speed rpm : 550
rack travel mm : 11.00
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1200
Pressure hPa : 1200
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 1200
Pressure hPa : -
rack travel mm : 7.90
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1200

Pressure hPa : 575
rack travel mm : 11.40
Tolerance mm : \pm 0.20

Pressure hPa : 225
rack travel mm : 8.95
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 290

Check
speed 1/min : $>$ 80

Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 88.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 25.0

LOW IDLE

Rack travel in mm : 5.50
Tolerance mm : ± 0.10

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.04.97
Test oil : ISO 4113

Combination No. : 0 402 736 856

Injection pump
Pump designation : PES6P110A120RS7213
EP type number : 0 412 716 804

Governor
Governor design. : RQV350...1250PA964
: -26K
Governor no. : 0 421 815 426

Cust. part No. : 3282240

Customer-spec. information
Customer : CUMMINS
Motor : 6BTAA
Power KW : 172.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 093

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

C07

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 6.00
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 15.10
Tolerance mm : ± 0.05

Rated speed rpm : 350

Rack travel in mm : 5.40
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 22.5
 Tolerance
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000S. : \pm 5.0
 Spreed
 Tolerance
 cm³/1000 strokes : 7.0
 Check tolerance
 cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1346
 guide sleeve
 travel mm : 8.44
 Tolerance mm : \pm 0.25

Rated speed rpm : 350
 guide sleeve
 travel mm : 1.94
 Tolerance mm : \pm 0.25

Rated speed rpm : 840
 guide sleeve
 travel mm : 4.58
 Tolerance mm : \pm 0.25

Rated speed rpm : 403
 guide sleeve
 travel mm : 2.53
 Tolerance mm : \pm 0.25

Rated speed rpm : 450
 guide sleeve
 travel mm : 2.76
 Tolerance mm : \pm 0.25

Rated speed rpm : 1620
 guide sleeve
 travel mm : 11.50
 Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1440

Rack travel in mm : 9.00
 Tolerance mm : \pm 3.00

CONTROL LEVER

control lever
 position degree : 123.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 15.30
 Rated speed rpm : 1325
 Tolerance 1/min : \pm 5

rack travel mm : 4.00
 Rated speed rpm : 1480
 Tolerance 1/min : \pm 15

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1600

LOW IDLE

control lever
 position degree : 70.0
 tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : > 7.20

Testing:

Rated speed rpm : 350
 rack travel mm : 5.40
 Tolerance mm : \pm 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1100
 rack travel mm : 15.10
 Tolerance mm : \pm 0.05

Rated speed rpm : 800
 rack travel mm : 13.70
 Tolerance mm : \pm 0.10

Rated speed rpm : 1250

rack travel mm : 16.30
Tolerance mm : + 0.10

Rated speed rpm : 400
rack travel mm : 13.70
Tolerance mm : + 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1800
rack travel mm : 16.30
Tolerance mm : + 0.10

Rated speed rpm : 1250
Pressure hPa : -
rack travel mm : 9.05
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 450
rack travel mm : 10.75
Tolerance mm : + 0.20

Pressure hPa : 1150
rack travel mm : 14.35
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 280

Check
speed 1/min : > 80
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1800
Rated speed rpm : 800
Del. quantity
cm3/1000 strokes : 157.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 6.0

Speed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 94.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.50
Tolerance mm : + 0.50
Del. quantity
cm3/1000 strokes : 162.0
Tolerance
cm3/1000 strokes : + 20.0
Check tolerance
cm3/1000S. : + 24.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.40
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 22.5
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 5.0
Speed
Tolerance
cm3/1000 strokes : 7.0
Check tolerance
cm3/1000S. : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.04.97
Test oil : ISO 4113

Combination No. : 0 402 736 858

Injection pump
Pump designation : PES6P110A120RS7214
EP type number : 0 412 716 805

Governor
Governor design. : RQV350...1200PA964
: -28K
Governor no. : 0 421 815 428

Cust. part No. : 3282464

Customer-spec. information
Customer : CUMMINS
Motor : 6CTA-A
Power KW : 156.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity
min. L/h : 120
Tolerance L/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 5.50
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.35

Tolerance mm : \pm 0.05

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1200
guide sleeve
travel mm : 9.10
Tolerance mm : \pm 0.10

Rated speed rpm : 350
guide sleeve
travel mm : 1.80
Tolerance mm : \pm 0.20

Rated speed rpm : 450
guide sleeve
travel mm : 3.30
Tolerance mm : \pm 0.20

Rated speed rpm : 700
guide sleeve
travel mm : 6.10
Tolerance mm : \pm 0.20

Rated speed rpm : 1400
guide sleeve
travel mm : 10.90
Tolerance mm : \pm 0.20

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1330

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.30
Rated speed rpm : 1250
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1380
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 65.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 275
CRT mm min. : $>$ 7.20

Testing:

Rated speed rpm : 350
rack travel mm : 5.50
Tolerance mm : \pm 0.10

Rated speed rpm : 423

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 650
rack travel mm : 11.10
Tolerance mm : \pm 0.20

Rated speed rpm : 550
rack travel mm : 11.00
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1200
Pressure hPa : 1200
rack travel mm : 12.35

Tolerance mm : \pm 0.05
Rated speed rpm : 1200
Pressure hPa : -
rack travel mm : 7.90
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1200
Pressure hPa : 575
rack travel mm : 11.40
Tolerance mm : \pm 0.20
Pressure hPa : 225
rack travel mm : 8.95
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 290
Check speed 1/min : $>$ 80
Check speed 1/min : $<$ 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 91.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.04.97
Test oil : ISO 4113

Combination No. : 0 402 736 860

Injection pump
Pump designation : PES6P110A120RS7214
EP type number : 0 402 716 805

Governor
Governor design. : RQV350...1200PA964
 : -29K
Governor no. : 0 421 815 430

Cust. part No. : 3282466

Customer-spec. information
Customer : CDC
Motor : 6CTA-A
Power KW : 187.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 120
Tolerance l/h : ± 5.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 4.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300

Start of delivery blocking

*NW after s.o.d. : 5.50
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 14.55

Tolerance mm : \pm 0.05

Rack travel in mm : 5.40
Tolerance mm : \pm 0.10

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1330

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

CONTROL LEVER

control lever
position degree : 66.0
tolerance degree : \pm 4.0

control lever
position degree : 119.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 13.50
Rated speed rpm : 1250
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1410
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 65.0
tolerance degree : \pm 4.0

control lever
position degree : 15.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 275

CRT mm min. : $>$ 7.20

Testing:

Rated speed rpm : 350
rack travel mm : 5.40
Tolerance mm : \pm 0.10

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 14.55
Tolerance mm : \pm 0.05

Rated speed rpm : 650
rack travel mm : 11.50
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1200
Pressure hPa : 1200
rack travel mm : 14.55
Tolerance mm : \pm 0.05

Rated speed rpm : 1200
Pressure hPa : -
rack travel mm : 7.70
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1200

Pressure hPa : 860
rack travel mm : 13.40
Tolerance mm : \pm 0.20

Pressure hPa : 320
rack travel mm : 9.45
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 290

Check
speed 1/min : > 80
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 167.5
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 91.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 25.0

LOW IDLE

Rack travel in mm : 5.40
Tolerance mm : ± 0.10

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.04.97
Test oil : ISO 4113
Combination No. : 0 400 463 155
Injection pump
Pump designation : PES3A80D410/3RS1350
EP type number : 0 410 483 023
Governor
Governor design. : RSV325...1175A8C2223
: -4L
Governor no. : 0 420 232 620

Cust. part No. :

Customer-spec. information
Customer : KHD
Motor : F3L912 *
Power KW : 38.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 1.95
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 2

Phasing : 0-120-240
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1175

Rack travel in mm : 10.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 56.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.0

Speed

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

Rated speed rpm : 325

Rack travel in mm : 6.00

Tolerance mm : ± 0.10

Del. quantity

cm³/1000 strokes : 11.0

Tolerance

cm³/1000 strokes : ± 1.5

Check tolerance

cm³/1000S. : ± 3.5

Speed

Tolerance

cm³/1000 strokes : 4.0

Check tolerance

cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever

position degree : - 3

Rated speed rpm : 800

Rack travel in mm : 0.50

Tolerance mm : ± 0.20

governor spring

pre-tension

click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 800

Aneroid pressure

hPa : -

Del. quantity

cm³/1000 strokes : 56.0

Tolerance

cm³/1000 strokes : ± 0.5

Check tolerance

cm³/1000S. : ± 2.0

Speed

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 4.0

CONTROL LEVER

control lever

position degree : 106.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.10

Rated speed rpm : 1220

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1260

Tolerance 1/min : ± 15

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1425

rack travel mm : 4.00

Rated speed rpm : 1265

Tolerance 1/min : ± 15

LOW IDLE

control lever

position degree : 70.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325

rack travel mm : 5.50

Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325

rack travel mm : 6.00

Tolerance mm : ± 0.10

rack travel mm : 2.00

Rated speed rpm : 485

TORQUE CONTROL

Rated speed rpm : 1175
rack travel mm : 10.15
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 10.95
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 10.50
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1175
Del. quantity
cm³/1000 strokes : 58.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.80
Tolerance mm : \pm 0.15
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 6.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5

Speed

Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.04.97
Test oil : ISO 4113
Combination No. : 0 400 674 048
Injection pump
Pump designation : PE4A95D420RS2662-1
EP type number : 0 410 694 994
Governor
Governor design. : RSV350...1100A8C2222
: -2R
Governor no. : 0 420 233 339
Cust. part No. : 44 004 065 M91

Customer-spec. information
Customer : HANOMAG
Motor : D944T
Power KW : 97.0

TEST BENCH REQUIREMENTS

Inlet line : 1.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : D AUE REN TL.
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 003
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 4- 3

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 130.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 350

Rack travel in mm : 6.30

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Speed

Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed

Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 100.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 11.80
Rated speed rpm : 1145
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1200
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1220
Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 68.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 5.80
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 350
rack travel mm : 6.30
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.80
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 13.30
Tolerance mm : \pm 0.05

Rated speed rpm : 900
rack travel mm : 13.00
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 131.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 6.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5

Speed

Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.04.97
Test oil : ISO 4113

Combination No. : 0 400 674 049

Injection pump
Pump designation : PE4A95D420RS2662-1
EP type number : 0 410 694 994

Governor
Governor design. : RSV350...1100A8C2222
: -3R
Governor no. : 0 420 233 340

Cust. part No. : 4404 084 M91

Customer-spec. information
Customer : HANOMAG
Motor : D944T
Power KW : 97.0

TEST BENCH REQUIREMENTS

Inlet line : 1.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : D AUE REN TL.

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 4- 3

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 350

Rack travel in mm : 6.30
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 4.00

CONTROL LEVER

control lever
position degree : 103.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.25
Rated speed rpm : 1145
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1200
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1225
Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 72.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 5.80
Tolerance mm : ± 0.10

Rated speed rpm : 100
CRT mm min. : > 19.50

Testing:

Rated speed rpm : 350
rack travel mm : 6.30
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 500
rack travel mm : 11.70
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 11.50
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 105.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : ± 0.75
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : ± 7.5
Check tolerance
cm³/1000S. : ± 10.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 6.30
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.01.94
Test oil : ISO 4113

Combination No. : 0 401 846 849

Injection pump
Pump designation : PE6P120A320RS3196
EP type number : 0 411 826 763

Governor
Governor design. : RQV200...1100PA729
: -1
Governor no. : 0 421 813 470

Cust. part No. :

Customer-spec. information
Customer : SCANIA
Motor : DS9 06

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 225

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1120

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

CONTROL LEVER

control lever
position degree : 59.0
tolerance degree : \pm 4.0

control lever
position degree : 114.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 9.40
Rated speed rpm : 1145
Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 15

rack travel mm : 4.00
Rated speed rpm : 1265
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 64.0
tolerance degree : \pm 4.0

control lever
position degree : 9.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 6.20

Testing:

Rated speed rpm : 225
rack travel mm : 5.00
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 330
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 10.45
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 149.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50

Del. quantity
cm³/1000 strokes : 355.0
Tolerance
cm³/1000 strokes : +- 20.0
Check tolerance
cm³/1000S. : +- 24.0

LOW IDLE

Rated speed rpm : 225

Rack travel in mm : 5.00
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.0
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.10.94
Test oil : ISO 4113

Combination No. : 0 401 846 950

Injection pump
Pump designation : PE6P110A720RS3289
EP type number : 0 411 816 781

Governor
Governor design. : RQV200...1100PA555
: -5
Governor no. : 0 421 813 943

Cust. part No. : 1333234

Customer-spec. information
Customer : SCANIA
Motor : DS11 63A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.35
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 325

Rack travel in mm : 6.60

Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000s. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000s. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1130

Rack travel in mm : 16.50
Tolerance mm : + 1.30

CONTROL LEVER

control lever
position degree : 62.0
tolerance degree : + 4.0

control lever
position degree : 116.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 11.30
Rated speed rpm : 1145
Tolerance 1/min : + 5
Check
speed 1/min : + 10

rack travel mm : 4.00
Rated speed rpm : 1280
Tolerance 1/min : + 15
Check
speed 1/min : + 20

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 69.0
tolerance degree : + 4.0

control lever
position degree : 16.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. : > 8.80

Testing:

Rated speed rpm : 325
rack travel mm : 6.60
Tolerance mm : + 0.10

Rated speed rpm : 310

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.35
Tolerance mm : + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.35
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.00
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 140
rack travel mm : 10.80
Tolerance mm : + 0.15

Pressure hPa : 200

rack travel mm : 11.75
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 164.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 6.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed

Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 17.06.94
Test oil : ISO 4113

Combination No. : 0 401 846 986

Injection pump
Pump designation : PE6P110A720RS3289-1
EP type number : 0 411 816 795

Governor
Governor design. : RQ900PA1153
Governor no. : 0 421 801 724

Cust. part No. : 1363597

Customer-spec. information
Customer : SCANIA
Motor : DS1193A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

D03

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.35
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rack travel in mm : 4.80
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 25.0
 Tolerance
 cm³/1000 strokes : \pm 4.0
 Check tolerance
 cm³/1000S. : \pm 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 856
 guide sleeve
 travel mm : 0.74
 Tolerance mm : \pm 0.10

Rated speed rpm : 630
 guide sleeve
 travel mm : -7.07
 Tolerance mm : \pm 0.10

Rated speed rpm : 1050
 guide sleeve
 travel mm : 16.80
 Tolerance mm : \pm 0.10

Rated speed rpm : 989
 guide sleeve
 travel mm : 10.00
 Tolerance mm : \pm 0.10

Rated speed rpm : 1050
 guide sleeve
 travel mm : 11.50
 Tolerance mm : \pm 0.50

CONTROL LEVER

control lever
 position degree : 22.0
 tolerance degree : \pm 4.0

control lever
 position degree : 84.0
 tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 900
 rack travel mm : 11.30

Rated speed rpm : 946
 Tolerance 1/min : \pm 4
 rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1000

Rated speed rpm : 901
 rack travel mm : 11.30

Rated speed rpm : 947
 Tolerance 1/min : \pm 4
 rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1000

Rated speed rpm : 902
 rack travel mm : 11.30

Rated speed rpm : 948
 Tolerance 1/min : \pm 4
 rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1000

Rated speed rpm : 903
 rack travel mm : 11.30

Rated speed rpm : 949
 Tolerance 1/min : \pm 4
 rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1000

Rated speed rpm : 904
 rack travel mm : 11.30

Rated speed rpm : 950
 Tolerance 1/min : \pm 4
 rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : \pm 0.50

Rated speed rpm : 1000

Rated speed rpm : 905
rack travel mm : 11.30

Rated speed rpm : 951
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1000

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.35
Tolerance mm : ± 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.00
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 140
rack travel mm : 10.80
Tolerance mm : ± 0.15

Pressure hPa : 200
rack travel mm : 11.75
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.06.94
Test oil : ISO 4113

Combination No. : 0 401 846 987

Injection pump
Pump designation : PE6P110A720RS3289-1
EP type number : 0 411 816 795

Governor
Governor design. : RQ750PA1153-1
Governor no. : 0 421 801 725

Cust. part No. : 1363596

Customer-spec. information
Customer : SCANIA
Motor : DS1193A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.35
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 172.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rack travel in mm : 4.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : ± 4.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 759
guide sleeve
travel mm : 6.81
Tolerance mm : ± 0.10

Rated speed rpm : 520
guide sleeve
travel mm : -5.40
Tolerance mm : ± 0.10

Rated speed rpm : 850
guide sleeve
travel mm : 17.21
Tolerance mm : ± 0.10

Rated speed rpm : 793
guide sleeve
travel mm : 10.00
Tolerance mm : ± 0.10

Rated speed rpm : 850
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 172.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 36.0
tolerance degree : ± 4.0

control lever
position degree : 98.0
tolerance degree : ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 11.30

Rated speed rpm : 788
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 11.30

Rated speed rpm : 789
Tolerance 1/min : ± 4

rack travel mm : 4.00
rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 11.30

Rated speed rpm : 790
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 11.30

Rated speed rpm : 791
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 11.30

Rated speed rpm : 792
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 11.30

Rated speed rpm : 793
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.35
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.35
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.00
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 200
rack travel mm : 11.75
Tolerance mm : + 0.05

Pressure hPa : 140
rack travel mm : 10.80
Tolerance mm : + 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 24.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.06.97
Test oil : ISO 4113

Combination No. : 0 402 646 836

Injection pump
Pump designation : PE6P120A720RS7126
: -10
EP type number : 0 412 626 926

Governor
Governor design. : RQV200...1000PA725
: -1
Governor no. : 0 421 813 552

Cust. part No. : 1107958

Customer-spec. information
Customer : SCANIA
Motor : DSC11 18

TEST BENCH REQUIREMENTS

Inlet Line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.15
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 235.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 225

Rack travel in mm : 4.60
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1040

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : + 4.0

control lever
position degree : 63.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.10
Rated speed rpm : 1045

Tolerance 1/min : + 5
Check
speed 1/min : + 10

rack travel mm : 4.00
Rated speed rpm : 1160

Tolerance 1/min : + 15
Check
speed 1/min : + 20

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 11.0
tolerance degree : + 4.0

control lever
position degree : 65.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 6.10

Testing:

Rated speed rpm : 225
rack travel mm : 4.60
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 370
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 14.15
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 14.15
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.15
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.70
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 250
rack travel mm : 11.20
Tolerance mm : \pm 0.20

Pressure hPa : 510
rack travel mm : 13.05
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1000

Del. quantity
cm³/1000 strokes : 227.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 225
Rack travel in mm : 4.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.11.94
Test oil : ISO 4113
Combination No. : 0 402 646 880
Injection pump
Pump designation : PE6P120A720RS7126
 : -10
EP type number : 0 412 626 929
Governor
Governor design. : RQV200...1050PA725
 : -5
Governor no. : 0 421 813 814
Cust. part No. : 1120969

Customer-spec. information
Customer : SCANIA
Motor : DS 11

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Vibration
damper
(RoBo diaphragm) : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 1 688 901 019
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015
Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
 : 4
Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery mark
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.15
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 235.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 225

Rack travel in mm : 4.60
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1200

Rack travel in mm : 10.50
Tolerance mm : \pm 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 62.0
tolerance degree : \pm 4.0

control lever
position degree : 117.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 13.10
Rated speed rpm : 1095

Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1215

Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1320

LOW IDLE

control lever
position degree : 64.0
tolerance degree : \pm 4.0

control lever
position degree : 10.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 6.10

Testing:

Rated speed rpm : 225
rack travel mm : 4.60
Tolerance mm : \pm 0.30

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 14.15
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 14.15
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 14.15
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.70
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 510
rack travel mm : 13.05
Tolerance mm : \pm 0.05

Pressure hPa : 250
rack travel mm : 11.20
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 226.0

Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000s. : \pm 6.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 24.0

LOW IDLE

Rated speed rpm : 225
Rack travel in mm : 4.60
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.10.94
Test oil : ISO 4113

Combination No. : 0 402 646 885

Injection pump
Pump designation : PE6P120A720RS7126
: -10
EP type number : 0 412 626 929

Governor
Governor design. : RQV350...1050PA795
: -9
Governor no. : 0 421 813 769

Cust. part No. : 1305080

Customer-spec. information
Customer : SCANIA
Motor : DS11 54,57

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.15
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 235.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Speed	
Tolerance cm ³ /1000 strokes	: 6.0
Check tolerance cm ³ /1000S.	: 9.0

Rated speed rpm	: 350
Rack travel in mm	: 4.40
Tolerance mm	: ± 0.30
Del. quantity cm ³ /1000 strokes	: 17.0
Tolerance cm ³ /1000 strokes	: ± 2.0
Check tolerance cm ³ /1000S.	: ± 4.0
Speed	
Tolerance cm ³ /1000 strokes	: 3.0
Check tolerance cm ³ /1000S.	: 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 1
Rated speed rpm	: 1230
Rack travel in mm	: 16.50
Tolerance mm	: ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 700
Aneroid pressure hPa	: -
Del. quantity cm ³ /1000 strokes	: 235.0

Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Speed	
Tolerance cm ³ /1000 strokes	: 6.0
Check tolerance cm ³ /1000S.	: 9.0

CONTROL LEVER

control lever position degree	: 54.0
tolerance degree	: ± 4.0
control lever position degree	: 102.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 13.10
Rated speed rpm	: 1095
Tolerance 1/min	: ± 5
Check speed 1/min	: ± 10
rack travel mm	: 4.00
Rated speed rpm	: 1240
Tolerance 1/min	: ± 15
Check speed 1/min	: ± 20
rack travel mm	: 0.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 1350

LOW IDLE

control lever position degree	: 72.0
tolerance degree	: ± 4.0
control lever position degree	: 23.0
tolerance degree	: ± 4.0

Setting point w/out bumper spring

Rated speed rpm	: 100
CRT mm min.	: > 10.00

Testing:

Rated speed rpm : 350
rack travel mm : 4.40
Tolerance mm : \pm 0.30

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 14.15
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 14.15
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 14.15
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.70
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 510
rack travel mm : 13.05
Tolerance mm : \pm 0.05

Pressure hPa : 250
rack travel mm : 11.20
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 227.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 4.40
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.09.94
Test oil : ISO 4113

Combination No. : 0 402 646 904

Injection pump
Pump designation : PE6P120A720RS7126
: -10
EP type number : 0 412 626 929

Governor
Governor design. : RQV300...900PA795
: -10
Governor no. : 0 421 813 846

Cust. part No. : 1305081

Customer-spec. information
Customer : SCANIA
Motor : DS11

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 235.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 4.50

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 970

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 235.0

Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 50.0
tolerance degree : + 4.0

control lever
position degree : 108.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.10
Rated speed rpm : 945
Tolerance 1/min : + 5
Check
speed 1/min : + 10

rack travel mm : 4.00
Rated speed rpm : 1045
Tolerance 1/min : + 15
Check
speed 1/min : + 20

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 77.0
tolerance degree : + 4.0

control lever
position degree : 19.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100
CRT mm min. : > 10.00

Testing:

Rated speed rpm : 300
rack travel mm : 4.50
Tolerance mm : \pm 0.10

Rated speed rpm : 300
rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 14.15
Tolerance mm : \pm 0.05

Rated speed rpm : 900
rack travel mm : 14.15
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 14.15
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.70
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 510
rack travel mm : 13.05
Tolerance mm : \pm 0.05

Pressure hPa : 250
rack travel mm : 11.20
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 224.0
Tolerance
cm³/1000 strokes : \pm 4.0

Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 4.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113

Combination No. : 0 402 648 839

Injection pump
Pump designation : PE8P120A720LS7125
: -10T
EP type number : 0 412 628 890

Governor
Governor design. : RQV200...950PA736-1
Governor no. : 0 421 813 551

Cust. part No. : 380804

Customer-spec. information
Customer : SCANIA
Motor : DSC14 03

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Vibration
damper
(RoBo diaphragm) : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed r.p.m. : 225

Rack travel in mm : 7.00

Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1040

Rack travel in mm : 16.50
Tolerance mm : + 1.30

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : + 4.0

control lever
position degree : 95.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 12.80
Rated speed rpm : 995
Tolerance 1/min : + 5
Check
speed 1/min : + 10

rack travel mm : 4.00
Rated speed rpm : 1125
Tolerance 1/min : + 15
Check
speed 1/min : + 20

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 44.0
tolerance degree : + 4.0

control lever
position degree : 10.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 125
CRT mm min. : > 6.00

Testing:

Rated speed rpm : 225
rack travel mm : 5.00
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 13.85
Tolerance mm : + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 13.85
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.40
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 215
rack travel mm : 12.00
Tolerance mm : + 0.15

Pressure hPa : 365
rack travel mm : 12.85
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 215.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 225

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.10.94
Test oil : ISO 4113

Combination No. : 0 402 648 867

Injection pump
Pump designation : PE8P120A720/4LS7166
: -1
EP type number : 0 412 628 897

Governor
Governor design. : RQ750PA758-7
Governor no. : 0 421 801 490

Cust. part No. : 1305125

Customer-spec. information
Customer : SCANIA
Motor : DS 14

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Vibration
damper
(RoBo diaphragm) : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.50

Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.55
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 253.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spreed	
Tolerance cm ³ /1000 strokes	: 7.0
Check tolerance cm ³ /1000S.	: 10.0

Rack travel in mm	: 5.10
Tolerance mm	: ± 0.10
Del. quantity cm ³ /1000 strokes	: 16.0
Tolerance cm ³ /1000 strokes	: ± 4.0
Check tolerance cm ³ /1000S.	: ± 6.0
Spreed	
Tolerance cm ³ /1000 strokes	: 4.0
Check tolerance cm ³ /1000S.	: 7.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 700
Aneroid pressure hPa	: 900
Del. quantity cm ³ /1000 strokes	: 253.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spreed	
Tolerance cm ³ /1000 strokes	: 7.0
Check tolerance cm ³ /1000S.	: 10.0

CONTROL LEVER

control lever position degree	: 30.0
tolerance degree	: ± 4.0

control lever position degree	: 89.0
tolerance degree	: ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm	: 750
rack travel mm	: 11.50

Rated speed rpm	: 788
Tolerance 1/min	: ± 4
rack travel mm	: 4.00

rack travel mm	: 0.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 850

Rated speed rpm	: 751
rack travel mm	: 11.50

Rated speed rpm	: 789
Tolerance 1/min	: ± 4
rack travel mm	: 4.00

rack travel mm	: 0.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 850

Rated speed rpm	: 752
rack travel mm	: 11.50

Rated speed rpm	: 790
Tolerance 1/min	: ± 4
rack travel mm	: 4.00

rack travel mm	: 0.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 850

Rated speed rpm	: 753
rack travel mm	: 11.50

Rated speed rpm	: 791
Tolerance 1/min	: ± 4
rack travel mm	: 4.00

rack travel mm	: 0.50
Tolerance mm	: ± 0.50

Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 11.50

Rated speed rpm : 792
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 11.50

Rated speed rpm : 793
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.55
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.55
Tolerance mm : ± 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.90
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 365
rack travel mm : 11.85
Tolerance mm : ± 0.05

Pressure hPa : 215
rack travel mm : 10.90

Tolerance mm : ± 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.12.94
Test oil : ISO 4113

Combination No. : 0 402 648 868

Injection pump
Pump designation : PE8P120A720LS7180
: -10
EP type number : 0 412 628 892

Governor
Governor design. : RQV350...1050PA795
: -8
Governor no. : 0 421 813 770

Cust. part No. : 1305130

Customer-spec. information
Customer : SCANIA
Motor : DSI 14

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Vibration
damper
(RoBo diaphragm) : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 350

Rack travel in mm : 4.60
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1325

Rack travel in mm : 8.50
Tolerance mm : \pm 2.50

CONTROL LEVER

control lever
position degree : 47.0
tolerance degree : \pm 4.0

control lever
position degree : 102.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 12.20
Rated speed rpm : 1095
Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1230
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

control lever
position degree : 16.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : $>$ 6.00

Testing:

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : \pm 0.30

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 13.25
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 13.25
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.90
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 215
rack travel mm : 10.90
Tolerance mm : \pm 0.10

Pressure hPa : 365
rack travel mm : 11.85
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 262.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000s. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.90
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 24.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 4.60
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.11.94

Test oil : ISO 4113

Combination No. : 0 402 648 873

Injection pump

Pump designation : PE8P120A920/4LS7166

: -1

EF type number : 0 412 628 897

Governor

Governer design. : RQ900PA758-13

Governer no. : 0 421 801 501

Cust. part No. : 1305126

Customer-spec. information

Customer : SCANIA

Motor : DS 14

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Vibration damper

(RoBo diaphragm) : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Test nozzle holder assembly

: 1 688 901 019

Opening pressure bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.05

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rack travel in mm : 5.10
 Tolerance mm : \pm 0.10
 Tolerance
 cm³/1000 strokes : \pm 4.0
 Check tolerance
 cm³/1000S. : \pm 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 909
 guide sleeve
 travel mm : 4.74
 Tolerance mm : \pm 0.25

Rated speed rpm : 630
 guide sleeve
 travel mm : -6.36
 Tolerance mm : \pm 0.25

Rated speed rpm : 1040
 guide sleeve
 travel mm : 16.81
 Tolerance mm : \pm 0.25

Rated speed rpm : 977
 guide sleeve
 travel mm : 10.00
 Tolerance mm : \pm 0.25

Rated speed rpm : 1040
 guide sleeve
 travel mm : 11.50
 Tolerance mm : \pm 0.50

CONTROL LEVER

control lever
 position degree : 24.0
 tolerance degree : \pm 4.0

control lever
 position degree : 86.0
 tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 900
 rack travel mm : 11.50

Rated speed rpm : 946
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1000

Rated speed rpm : 901
 rack travel mm : 11.50

Rated speed rpm : 947
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1000

Rated speed rpm : 902
 rack travel mm : 11.50

Rated speed rpm : 948
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1000

Rated speed rpm : 903
 rack travel mm : 11.50

Rated speed rpm : 949
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1000

Rated speed rpm : 904
 rack travel mm : 11.50

Rated speed rpm : 950
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1000

Rated speed rpm : 905
rack travel mm : 11.50

Rated speed rpm : 951
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1000

End of test specification sheet

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.20
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 215
rack travel mm : 10.90
Tolerance mm : \pm 0.10

Pressure hPa : 365
rack travel mm : 11.85
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113

Combination No. : 0 402 648 883

Injection pump
Pump designation : PE8P120A720LS7125
: -10
EP type number : 0 412 628 891

Governor
Governor design. : RQV300...900PA795
: -11
Governor no. : 0 421 813 847

Cust. part No. : 1305129

Customer-spec. information
Customer : SCANIA
Motor : DS14 48M

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Vibration
damper
(RoBo diaphragm) : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 300

Rack travel in mm : 4.80
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 960
guide sleeve
travel mm : 8.18
Tolerance mm : \pm 0.20

Rated speed rpm : 300
guide sleeve
travel mm : 1.56
Tolerance mm : \pm 0.15

Rated speed rpm : 688
guide sleeve
travel mm : 5.27
Tolerance mm : \pm 0.25

Rated speed rpm : 345
guide sleeve
travel mm : 2.04
Tolerance mm : \pm 0.25

Rated speed rpm : 395
guide sleeve
travel mm : 2.62
Tolerance mm : \pm 0.25

Rated speed rpm : 450
guide sleeve
travel mm : 3.12
Tolerance mm : \pm 0.25

Rated speed rpm : 1190
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1035

Rack travel in mm : 12.50
Tolerance mm : \pm 1.30

CONTROL LEVER

control lever
position degree : 47.0
tolerance degree : \pm 4.0

control lever
position degree : 105.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.50
Rated speed rpm : 945
Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1040
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

control lever
position degree : 15.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : > 6.30

Testing:

Rated speed rpm : 300
rack travel mm : 4.80
Tolerance mm : \pm 0.10

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 13.55
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.35
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 215
rack travel mm : 12.00
Tolerance mm : \pm 0.15

Pressure hPa : 365
rack travel mm : 12.85
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 209.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 4.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.01.95

Test oil : ISO 4113

Combination No. : 0 402 945 301

Injection pump

Pump designation : PES5P120A720LS8511

EP type number : 0 412 925 201

Governor

Governer design. : RQV325...950PA1154K

Governer no. : 0 421 815 976

Cust. part No. : 0240749302

Customer-spec. information

Customer : MB-NFZ

Motor : OM449 LA

Power KW : 216.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 90

Tolerance l/h : ± 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.85

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 14.50

Tolerance mm : ± 0.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288

Start of delivery blocking

Barrel no. : 5

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.50

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 389.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 6.0

Spreed

Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 14.0

Rated speed rpm : 325

Rack travel in mm : 4.70
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 14.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1006
guide sleeve
travel mm : 7.42
Tolerance mm : + 0.15

Rated speed rpm : 325
guide sleeve
travel mm : 2.07
Tolerance mm : + 0.20

Rated speed rpm : 800
guide sleeve
travel mm : 4.86
Tolerance mm : + 0.25

Rated speed rpm : 345
guide sleeve
travel mm : 2.33
Tolerance mm : + 0.25

Rated speed rpm : 395

guide sleeve
travel mm : 2.76
Tolerance mm : + 0.25

Rated speed rpm : 510
guide sleeve
travel mm : 3.21
Tolerance mm : + 0.25

Rated speed rpm : 1169
guide sleeve
travel mm : 12.00
Tolerance mm : + 0.25

Rated speed rpm : 1250
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1160

Rack travel in mm : 12.50
Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 389.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

CONTROL LEVER

control lever
position degree : 110.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 12.50
Rated speed rpm : 995
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1085
Tolerance 1/min : \pm 15

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. : > 6.50

Testing:

Rated speed rpm : 325
rack travel mm : 4.70
Tolerance mm : \pm 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 13.50
Tolerance mm : \pm 0.05

Rated speed rpm : 850
rack travel mm : 12.80
Tolerance mm : \pm 0.10

Rated speed rpm : 550
rack travel mm : 11.20
Tolerance mm : \pm 0.10

Rated speed rpm : 400
rack travel mm : 11.00
Tolerance mm : \pm 0.20

Rated speed rpm : 850
rack travel mm : 10.80
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 950
Pressure hPa : 1200
rack travel mm : 13.50
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 850
rack travel mm : 8.10
Tolerance mm : \pm 0.20

Pressure hPa : -
Rated speed rpm : 350
rack travel mm : 7.30
Tolerance mm : \pm 0.20

Rated speed rpm : 950

Pressure hPa : 300
rack travel mm : 9.30
Tolerance mm : \pm 0.20

Pressure hPa : 600
rack travel mm : 10.80
Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : > 140
Rated speed rpm : < 245

Check
speed 1/min : > 120
Check
speed 1/min : < 265

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 382.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 7.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 372.0

Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 8.0

Aneroid pressure
hPa : 600
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 304.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 6.5

Aneroid pressure
hPa : -
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 207.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.00
Tolerance mm : + 0.40
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 24.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 4.70
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 14.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.10.94
Test oil : ISO 4113

Combination No. : 0 402 946 301

Injection pump
Pump designation : PES6P120A720LS8503
EP type number : 0 412 926 203

Governor
Governor design. : RQV300...950PA1084K
Governor no. : 0 421 815 985

Cust. part No. : 0240749202

Customer-spec. information
Customer : MB-NFZ
Motor : OM447 LA
Power KW : 260.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 70
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.50
Tolerance mm : ± 0.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.50
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 389.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 6.0

Spread

Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 14.0

Rated speed rpm : 300

Rack travel in mm : 5.00
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 14.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1006
guide sleeve
travel mm : 7.42
Tolerance mm : + 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 1.69
Tolerance mm : + 0.20

Rated speed rpm : 790
guide sleeve
travel mm : 4.79
Tolerance mm : + 0.25

Rated speed rpm : 345
guide sleeve
travel mm : 2.33
Tolerance mm : + 0.25

Rated speed rpm : 395
guide sleeve
travel mm : 2.79
Tolerance mm : + 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 3.17
Tolerance mm : + 0.25

Rated speed rpm : 1169
guide sleeve
travel mm : 12.00
Tolerance mm : + 0.25

Rated speed rpm : 1250
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1160

Rack travel in mm : 12.50
Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 389.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 6.0

Spread
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

CONTROL LEVER

control lever
position degree : 110.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 12.50
Rated speed rpm : 995

Tolerance 1/min : +- 5

rack travel mm : 4.00

Rated speed rpm : 1075

Tolerance 1/min : +- 15

rack travel mm : 0.75

Tolerance mm : +- 0.75

Rated speed rpm : 1250

LOW IDLE

control lever

position degree : 72.0

tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 6.50

Testing:

Rated speed rpm : 300

rack travel mm : 5.00

Tolerance mm : +- 0.10

Rated speed rpm : 370

TORQUE CONTROL

Rated speed rpm : 950

rack travel mm : 13.50

Tolerance mm : +- 0.05

Rated speed rpm : 850

rack travel mm : 12.70

Tolerance mm : +- 0.10

Rated speed rpm : 550

rack travel mm : 11.00

Tolerance mm : +- 0.20

Rated speed rpm : 400

rack travel mm : 10.40

Tolerance mm : +- 0.20

Rated speed rpm : 850

rack travel mm : 10.75

Tolerance mm : +- 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 950

Pressure hPa : 1200

rack travel mm : 13.50

Tolerance mm : +- 0.05

MEASUREMENT

Pressure hPa : -

Rated speed rpm : 850

rack travel mm : 8.25

Tolerance mm : +- 0.15

Pressure hPa : -

Rated speed rpm : 350

rack travel mm : 7.40

Tolerance mm : +- 0.20

Rated speed rpm : 950

Pressure hPa : 350

rack travel mm : 9.35

Tolerance mm : +- 0.15

Pressure hPa : 600

rack travel mm : 10.75

Tolerance mm : +- 0.15

Start interlock

Rated speed rpm : > 140

Rated speed rpm : < 220

Check

speed 1/min : > 120

Check

speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200

Rated speed rpm : 850

Del. quantity

cm³/1000 strokes : 374.0

Tolerance

cm³/1000 strokes : +- 2.0

Check tolerance

cm³/1000s. : +- 7.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 360.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 8.0

Aneroid pressure
hPa : 600
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 304.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 6.5

Aneroid pressure
hPa : -
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 207.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.50
Tolerance mm : \pm 0.40
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 14.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.06.97
Test oil : ISO 4113

Combination No. : 0 400 876 431

Injection pump
Pump designation : PES6A95D410RS2878
EP type number : 0 410 896 885

Governor
Governor design. : RSV350...1400A0C820L
Governor no. : 0 420 232 618

Cust. part No. : 0 220 74 8802

Customer-spec. information

Customer : MB-NFZ
Motor : OM 366 Euro 1
Power KW : 97.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1380

Rack travel in mm : 8.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 74.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 350

Rack travel in mm : 4.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 10.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5

Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1380
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 74.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed

Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 113.0
tolerance degree : ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1423
rack travel mm : 7.75

Rated speed rpm : 1468
Tolerance 1/min : ± 6
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1600

Rated speed rpm : 1424
rack travel mm : 7.75

Rated speed rpm : 1469
Tolerance 1/min : ± 6
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1600

Rated speed rpm : 1425
rack travel mm : 7.75

Rated speed rpm : 1470
Tolerance 1/min : ± 6
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1600

Rated speed rpm : 1426
rack travel mm : 7.75

Rated speed rpm : 1471
Tolerance 1/min : ± 6
rack travel mm : 4.00

rack travel mm : 1.00

Tolerance mm : \pm 0.70
Rated speed rpm : 1600

Rated speed rpm : 1427
rack travel mm : 7.75

Rated speed rpm : 1472
Tolerance 1/min : \pm 6
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : \pm 0.70
Rated speed rpm : 1600

Rated speed rpm : 1428
rack travel mm : 7.75

Rated speed rpm : 1473
Tolerance 1/min : \pm 6
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : \pm 0.70
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 80.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 4.50
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 420
Tolerance 1/min : \pm 30

SET IDLE AUXILIARY SPRING

Rated speed rpm : 420
rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1380
rack travel mm : 8.75
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 8.85
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 57.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.00
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 4.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 10.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.08.96

Test oil : ISO 4113

Combination No. : 0 402 646 992

Injection pump

Pump designation : PE6P120A720RS7021

EP type number : 0 412 626 869

Governor

Governer design. : RQ200/1000PA1036

Governer no. : 0 421 801 649

Cust. part No. : 1363610

Customer-spec. information

Customer : SCANIA

Motor : DSI11E01

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Test nozzle holder assembly

: 1 688 901 104

Opening pressure bar

: 251.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.05

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.50

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.45
Tolerance mm : \pm 0.05

Rated speed rpm : 250

Rack travel in mm : 6.30
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 31.0
Tolerance

cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance

cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1054
guide sleeve
travel mm : 4.39
Tolerance mm : \pm 0.10

Rated speed rpm : 250
guide sleeve
travel mm : 1.08
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 4.00
Tolerance mm : \pm 0.10

Rated speed rpm : 353
guide sleeve
travel mm : 3.46
Tolerance mm : \pm 0.10

Rated speed rpm : 420
guide sleeve
travel mm : 4.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1460
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 102
Rated speed rpm : 600

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

CONTROL LEVER

control lever
position degree : 43.0
tolerance degree : \pm 4.0

control lever
position degree : 98.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 12.40
Rated speed rpm : 1045
Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1185
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 66.0
tolerance degree : \pm 4.0

control lever
position degree : 11.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : $>$ 8.50

Testing:

Rated speed rpm : 250
rack travel mm : 6.30
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 350
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.45
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 13.45
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.45
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.90
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 235
rack travel mm : 13.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 227.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 268.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.90
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 6.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 31.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.03.94
Test oil : ISO 4113

Combination No. : 0 401 846 900

Injection pump
Pump designation : PE6P120A320RS3240
EP type number : 0 411 826 786

Governor
Governor design. : RQV250...1025PA921
: -16
Governor no. : 0 421 813 799

Cust. part No. : 478378-P02

Customer-spec. information
Customer : VOLVO-TRUCK
Motor : TD122FL
Power KW : 298.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 457 413 046

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rack travel in mm : 6.60
Tolerance mm : ± 0.10

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1100

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

CONTROL LEVER

control lever
position degree : 65.0
tolerance degree : \pm 4.0

control lever
position degree : 120.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 12.65
Rated speed rpm : 1070
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1155
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 64.0
tolerance degree : \pm 4.0

control lever
position degree : 9.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 8.10

Testing:

Rated speed rpm : 250
rack travel mm : 6.60
Tolerance mm : \pm 0.10

Rated speed rpm : 315

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.65
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.70
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 780
rack travel mm : 3.30
Tolerance mm : \pm 0.10

Pressure hPa : 90
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 290.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rack travel in mm : 6.60
Tolerance mm : \pm 0.10

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.12.95
Test oil : ISO 4113

Combination No. : 0 402 776 819

Injection pump
Pump designation : PES6P120A320LS7285
EP type number : 0 412 726 892

Governor
Governor design. : RSV350...1100P1A601
Governor no. : 0 421 833 482

Cust. part No. : 1823388C91

Customer-spec. information
Customer : NAVISTAR
Motor : DTA-531
Power KW : 222.0

TEST BENCH REQUIREMENTS

Inlet line : 2.4

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.8
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.90
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 216.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.50

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 33.5

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1

governor spring
pre-tension
click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 216.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 103.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.20

Rated speed rpm : 1150

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1200

Tolerance 1/min : \pm 5

rack travel mm : 0.50

Tolerance mm : \pm 0.50

Rated speed rpm : 1250

rack travel mm : 4.00

Rated speed rpm : 1205

Tolerance 1/min : \pm 5

LOW IDLE

control lever
position degree : 72.5
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 350

rack travel mm : 5.50

Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100

rack travel mm : 13.25

Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1500

Rated speed rpm : 400
Pressure hPa : -
rack travel mm : 8.30
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 400

Pressure hPa : 1035
rack travel mm : 11.90
Tolerance mm : \pm 0.20

Pressure hPa : 450
rack travel mm : 9.30
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 106.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 167.5
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 33.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.07.97
Test oil : ISO 4113

Combination No. : 0 400 876 420

Injection pump
Pump designation : PES6A90D410RS2757
EP type number : 0 410 896 086

Governor
Governor design. : RSV425...1000A1C2266
: L
Governor no. : 0 420 232 598

Cust. part No. :

Customer-spec. information
Customer : IVECO-FIAT
Motor : 8065.25.080

TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.30
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 90.5

Tolerance	
cm ³ /1000 strokes	: ± 0.5
Check tolerance	
cm ³ /1000S.	: ± 2.5
Speed	
Tolerance	
cm ³ /1000 strokes	: 3.0
Check tolerance	
cm ³ /1000S.	: 5.0

Rated speed rpm	: 475
Rack travel in mm	: 6.90
Tolerance mm	: ± 0.10
Del. quantity	
cm ³ /1000 strokes	: 13.0
Tolerance	
cm ³ /1000 strokes	: ± 3.0
Check tolerance	
cm ³ /1000S.	: ± 5.0
Speed	
Tolerance	
cm ³ /1000 strokes	: 2.5
Check tolerance	
cm ³ /1000S.	: 4.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever	
position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: ± 0.20
governor spring	
pre-tension	
click setting x	: 4.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1000
Aneroid pressure	
hPa	: 900

Del. quantity	
cm ³ /1000 strokes	: 90.5
Tolerance	
cm ³ /1000 strokes	: ± 0.5
Check tolerance	
cm ³ /1000S.	: ± 2.5
Speed	
Tolerance	
cm ³ /1000 strokes	: 3.0
Check tolerance	
cm ³ /1000S.	: 5.0

CONTROL LEVER

control lever	
position degree	: 93.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 10.80
Rated speed rpm	: 1045
Tolerance 1/min	: ± 5
rack travel mm	: 4.00
Rated speed rpm	: 1105
Tolerance 1/min	: ± 15

rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1240

rack travel mm	: 4.00
Rated speed rpm	: 1135
Tolerance 1/min	: ± 15

LOW IDLE

control lever	
position degree	: 67.0
tolerance degree	: ± 4.0

Setting point w/out bumper spring

Rated speed rpm	: 475
rack travel mm	: 6.40
Tolerance mm	: ± 0.10

Rated speed rpm	: 100
-----------------	-------

CRT mm min.	: > 19.50
-------------	-----------

Testing:

Rated speed rpm	: 475
-----------------	-------

rack travel mm : 6.90
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 650
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.80
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 12.30
Tolerance mm : \pm 0.10

Rated speed rpm : 500

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
Pressure hPa : 900
rack travel mm : 11.30
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
Pressure hPa : 900
rack travel mm : 11.80
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 1000

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

F03

Rated speed rpm : 475

Rack travel in mm : 6.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.07.97

Test oil : ISO 4113

Combination No. : 0 400 876 432

Injection pump

Pump designation : PES6A90D410RS2757

EP type number : 0 410 896 086

Governor

Governer design. : RSV425...1000A1C2266

: L

Governer no. : 0 420 232 598

Cust. part No. : 112069

Customer-spec. information

Customer : IVECO-FIAT

Motor : 8065.25.080

TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde assembly

: 0 681 343 009

Opening pressure bar

: 173.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 2.30

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.80

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 90.5

Tolerance
cm3/1000 strokes : + 0.5

Check tolerance
cm3/1000S. : + 2.5

Speed

Tolerance
cm3/1000 strokes : 3.0

Check tolerance
cm3/1000S. : 5.0

Rated speed rpm : 475

Rack travel in mm : 6.90
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 13.0
Tolerance
cm3/1000 strokes : + 3.0

Check tolerance
cm3/1000S. : + 5.0

Speed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 4.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 900

Del. quantity
cm3/1000 strokes : 90.5

Tolerance
cm3/1000 strokes : + 0.5

Check tolerance
cm3/1000S. : + 2.5

Speed
Tolerance
cm3/1000 strokes : 3.0

Check tolerance
cm3/1000S. : 5.0

CONTROL LEVER

control lever
position degree : 93.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 10.80
Rated speed rpm : 1045
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1105
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1240

rack travel mm : 4.00
Rated speed rpm : 1135
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 67.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 6.40
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 475

rack travel mm : 6.90
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 650
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.80
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 12.30
Tolerance mm : \pm 0.10

Rated speed rpm : 500

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
Pressure hPa : 900
rack travel mm : 11.30
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
Pressure hPa : 900
rack travel mm : 11.80
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 1000

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

F06

Rated speed rpm : 475

Rack travel in mm : 6.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.06.94
Test oil : ISO 4113

Combination No. : 0 402 776 810

Injection pump
Pump designation : PES6P120A72ORS7255
EP type number : 0 412 726 881

Governor
Governor design. : RSV475...1050P0A547
 : -1
Governor no. : 0 421 833 380

Cust. part No. : RE46181

Customer-spec. information
Customer : DEERE
Motor : 6101 AT012
Power KW : 209.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 079

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 145
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

F07

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 28.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 208.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 208.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 54.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 10.70

F08

Rated speed rpm : 1095
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1185
Tolerance 1/min : \pm 5

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1195
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 36.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 5.50
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 475
rack travel mm : 5.00
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 11.75
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 12.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500

rack travel mm : 12.30
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.20
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 875
rack travel mm : 11.65
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 218.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 184.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

F09

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.07.97

Test oil : ISO 4113

Combination No. : 0 402 796 812

Injection pump

Pump designation : PES6P120A720RS7315

EP type number : 0 412 726 962

Governor

Governor design. : RE30

Governor no. : 0 421 890 017

Cust. part No. : RE 57373

Customer-spec. information

Customer : DEERE

Motor : 6081

Power KW : 205.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Test nozzle holder assembly

: 1 688 901 103

Opening pressure bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

F10

x inside diameter : 3.0

x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS

No basic setting.

Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.60

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min⁻¹: 0

Setting point
(P, R and H pump)

Uact V : 3.100

CRT mm : 13.00

Tolerance mm : +/- 0.05

Check

tolerance mm : +/- 0.10

Check value

(P, R and H pump)

Uact V : 1.700

CRT mm : 6.15

Tolerance mm : +/- 0.25

Check

tolerance mm : +/- 0.30

Setting point

(M pump)

Uact V : 3.100

CRT mm : 12.50

Tolerance mm : +/- 0.05

Check

tolerance mm : +/- 0.10

Check value

(M pump)

Uact V : 1.700

CRT mm : 5.50

Tolerance mm : +/- 0.25

Check

tolerance mm : +/- 0.30

Stop position

(P, R and H pump)

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75

Tolerance mm : +/- 0.25

Check

tolerance mm : +/- 0.35

Stop position

(M pump)

Uact V : 0,720

Tolerance Volt : +/- 0,065

CRT mm : 1,00

Starting position

(M pump)

Uact V : 4,500

Tolerance Volt : +/- 0,115

CRT mm : 19,00

Tolerance mm : +/- 0,80

ENGINE-SPEED SENSOR

(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60

Amplitude V : 1.4

Tolerance V : +/- 0.6

Check

tolerance V : +/- 1.20

Engine speed min-1: 600

Difference

Amplitude to

Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700

Uact V : 2.940

Del. quantity

cm³/1000 strokes : 237.0

Tolerance

cm³/1000 strokes : +/- 3.0

Check tolerance

cm³/1000S. : +/- 6.0

Spread

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

TEST POINT L1

Rated speed rpm : 450

Uact V : 1.590

Tolerance Volt : +/- 0.060

Check tolerance

Volt : +/- 0.060

Del. quantity

cm³/1000 strokes : 26.0

Tolerance

cm³/1000 strokes : +/- 3.0

Spread

Tolerance

cm³/1000 strokes : 6.0

Check tolerance

cm³/1000S. : 10.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

Uact V : 4.600

Del. quantity
cm³/1000 strokes : 115.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000s. : ± 25.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.08.97

Test oil : ISO 4113

Combination No. : 0 402 646 970

Injection pump

Pump designation : PE6P120A320RS7248

: -10Y

EP type number : 0 412 626 902

Governor

Governor design. : RQV275...1150PA986

Governor no. : 0 421 813 920

Cust. part No. : 1248046/4

Customer-spec. information

Customer : DAF

Motor : RS 180 L

Power KW : 180.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. L/h : 130

Tolerance L/h : ± 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.25

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.75

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 10.75
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 147.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 4.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1206
guide sleeve
travel mm : 8.25
Tolerance mm : \pm 0.20

Rated speed rpm : 275
guide sleeve
travel mm : 1.44
Tolerance mm : \pm 0.15

Rated speed rpm : 799
guide sleeve
travel mm : 5.21
Tolerance mm : \pm 0.25

Rated speed rpm : 315
guide sleeve
travel mm : 1.98
Tolerance mm : \pm 0.25

Rated speed rpm : 365
guide sleeve
travel mm : 2.52
Tolerance mm : \pm 0.25

Rated speed rpm : 450
guide sleeve
travel mm : 3.07
Tolerance mm : \pm 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1340

Rack travel in mm : 9.70
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 147.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 9.75

Rated speed rpm : 1182
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1280
Tolerance 1/min : +- 15

rack travel mm : 0.70
Tolerance mm : +- 0.70
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 83.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : > 7.40

Testing:

Rated speed rpm : 275
rack travel mm : 4.70
Tolerance mm : +- 0.10

Rated speed rpm : 340

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 10.75
Tolerance mm : +- 0.05

Rated speed rpm : 1150
rack travel mm : 10.75
Tolerance mm : +- 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 10.75
Tolerance mm : +- 0.05

Rated speed rpm : 600
Pressure hPa : -
rack travel mm : 9.50

Tolerance mm : +- 0.10

MEASUREMENT

Rated speed rpm : 600

Pressure hPa : 260
rack travel mm : 10.35
Tolerance mm : +- 0.05

Pressure hPa : 190
rack travel mm : 9.90
Tolerance mm : +- 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 121.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 4.0

LOW IDLE

Rated speed rpm : 275
Rack travel in mm : 4.70
Tolerance mm : +- 0.10
Del. quantity
cm3/1000 strokes : 16.0
Tolerance
cm3/1000 strokes : +- 3.0
Check tolerance
cm3/1000S. : +- 6.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.01.94
Test oil : ISO 4113

Combination No. : 0 402 746 920

Injection pump
Pump designation : PES6P120A320RS7241
EP type number : 0 412 726 854

Governor
Governor design. : RQV350...900PA935-1
Governor no. : 0 421 813 820

Cust. part No. :

Customer spec. information
Customer : BAUDOUIN
Motor : 6P15 2E

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 150
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 074

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.05
Tolerance mm : ± 0.05

Rated speed rpm : 350

Rack travel in mm : 4.90

Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 20.0
 Tolerance
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000S. : \pm 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control Lever
 position degree : - 1
 Rated speed rpm : 1010
 Rack travel in mm : 11.00
 Tolerance mm : \pm 1.30

CONTROL LEVER

control Lever
 position degree : 123.0
 tolerance degree : \pm 4.0

RATED SPEED
 rack travel mm : 11.00
 Rated speed rpm : 945
 Tolerance 1/min : \pm 5

rack travel mm : 4.00
 Rated speed rpm : 1015
 Tolerance 1/min : \pm 15

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1150

LOW IDLE

control Lever
 position degree : 87.0
 tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 6.40

Testing:

Rated speed rpm : 350
 rack travel mm : 4.90
 Tolerance mm : \pm 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 900
 rack travel mm : 12.05
 Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
 Rated speed rpm : $<$ 270

Check
 speed 1/min : $>$ 80
 Check
 speed 1/min : $<$ 290

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 4.90
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 20.0
 Tolerance
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000S. : \pm 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 16.09.97

Test oil : ISO 4113

Combination No. : 0 400 876 420

Injection pump

Pump designation : PES6A90D410RS2757

EP type number : 0 410 896 086

Governor

Governor design. : RSV425...1000A1C2266

: L

Governor no. : 0 420 232 598

Cust. part No. :

Customer-spec. information

Customer : IVECO-FIAT

Motor : 8065.25.080

TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder assembly

: 0 681 343 009

Opening pressure bar

: 173.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 2.30

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.80

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 90.5

Tolerance

cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Spread

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 5.0

Rated speed rpm : 475

Rack travel in mm : 6.90
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Spread
Tolerance

cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 4.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 90.5
Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Spread
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

CONTROL LEVER

control lever
position degree : 108.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.80
Rated speed rpm : 1045
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1105
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1240

rack travel mm : 4.00
Rated speed rpm : 1135
Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 82.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 6.40
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 475
rack travel mm : 6.90
Tolerance mm : ± 0.10

rack travel mm : 2.00

Rated speed rpm : 650
Tolerance 1/min : +- 30

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.80
Tolerance mm : +- 0.05

Rated speed rpm : 1000
rack travel mm : 12.30
Tolerance mm : +- 0.10

Rated speed rpm : 500

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
Pressure hPa : 900
rack travel mm : 11.30
Tolerance mm : +- 0.10

Rated speed rpm : 1000
Pressure hPa : 900
rack travel mm : 11.80
Tolerance mm : +- 0.05

MEASUREMENT

Rated speed rpm : 1000

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : +- 0.75
Del. quantity
cm3/1000 strokes : 90.0
Tolerance
cm3/1000 strokes : +- 5.0
Check tolerance
cm3/1000S. : +- 8.0

LOW IDLE

Rated speed rpm : 475
Rack travel in mm : 6.90

F21

Tolerance mm : +- 0.10
Del. quantity
cm3/1000 strokes : 13.0
Tolerance
cm3/1000 strokes : +- 3.0
Check tolerance
cm3/1000S. : +- 5.0
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 4.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.09.97
Test oil : ISO 4113

Combination No. : 9 400 030 669

Injection pump
Pump designation : PES6A100D320/3RS3503
EP type number : 9 410 037 213

Governor
Governor design. : RQV400...1250AB1301R
Governor no. : 9 420 030 158

Cust. part No. : TATA-CUMMINS

Customer-spec. information
Customer : CUMMINS
Motor : 6BTAA
Power KW : 118.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2;

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 9 451 037 430

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 207.0
Tolerance bar : ± 3.0

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.10
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 7.00
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.75

Tolerance mm : \pm 0.05

Rack travel in mm : 6.00
Tolerance mm : \pm 0.10

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1347
guide sleeve
travel mm : 8.48
Tolerance mm : \pm 0.15

Rated speed rpm : 400
guide sleeve
travel mm : 1.71
Tolerance mm : \pm 0.20

Rated speed rpm : 380
guide sleeve
travel mm : 4.97
Tolerance mm : \pm 0.25

Rated speed rpm : 499
guide sleeve
travel mm : 2.75
Tolerance mm : \pm 0.25

Rated speed rpm : 549
guide sleeve
travel mm : 3.30
Tolerance mm : \pm 0.25

Rated speed rpm : 560
guide sleeve
travel mm : 3.37
Tolerance mm : \pm 0.25

Rated speed rpm : 1620
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1250
Rack travel in mm : 16.00
Tolerance mm : \pm 1.30

CONTROL LEVER

control lever
position degree : 61.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.75
Rated speed rpm : 1300
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1425
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1485

LOW IDLE

control lever
position degree : 15.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 9.00

Testing:

Rated speed rpm : 400
rack travel mm : 6.00
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 625
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.75
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.75
Tolerance mm : \pm 0.10

Rated speed rpm : 1250
rack travel mm : 11.75
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 600
rack travel mm : 11.75
Tolerance mm : \pm 0.10

Rated speed rpm : 550
Pressure hPa : -
rack travel mm : 10.50
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 550
Pressure hPa : 400
rack travel mm : 11.20
Tolerance mm : \pm 0.20

Pressure hPa : 340
rack travel mm : 10.80
Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : > 170
Rated speed rpm : > 300

Check
speed 1/min : < 190
Check
speed 1/min : < 340

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.00
Tolerance mm : \pm 0.75

LOW IDLE

Rack travel in mm : 6.00
Tolerance mm : \pm 0.10

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.09.97

Test oil : ISO 4113

Combination No. : 9 400 030 696

Injection pump

Pump designation : PES6A95D320/3RS2881

EP type number : 9 410 037 215

Governor

Governor design. : RSV475...1250A0C826R

Governor no. : 9 420 034 700

Cust. part No. : 3928662

Customer-spec. information

Customer : CUMMINS

Motor : 6BT - 165 HP

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0

Tolerance bar : ± 1.0

Prestroke mm : 2.85

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 7.00

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.60

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 106.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 475

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.5

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spreed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 800

Del. quantity
cm³/1000 strokes : 106.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 111.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.60
Rated speed rpm : 1315

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1415

Tolerance 1/min : \pm 5

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1500

rack travel mm : 4.00

Tolerance mm : \pm 0.05

Rated speed rpm : 1420

Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 85.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 475

rack travel mm : 5.00

Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 475
rack travel mm : 5.50
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 575
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 12.60
Tolerance mm : \pm 0.05

Rated speed rpm : 750

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 800

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.00
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 655
rack travel mm : 12.30
Tolerance mm : \pm 0.20

Pressure hPa : 500
rack travel mm : 11.70
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 800
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 113.8
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 88.8
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 121.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000s. : \pm 15.0

LOW IDLE

Rated speed rpm : 475

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.09.97

Test oil : ISO 4113

Combination No. : 9 400 030 707

Injection pump

Pump designation : PES6A100D320/3RS3511

EP type number : 9 410 037 253

Governor

Governor design. : RQV400...1250AB1320R

Governor no. : F 002 A30 000

Cust. part No. : TATA-CUMMINS

Customer-spec. information

Customer : CUMMINS

Motor : 6BT - 145 BHP

TEST BENCH REQUIREMENTS

Inlet line : 3.2;

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 9 451 037 430

Inlet press. bar : 2.0

Tolerance bar : ± 0.1

Test nozzle holde
assembly

: 1 688 901 101

Opening pressure
bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0

Tolerance bar : ± 1.0

Prestroke mm : 3.10

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 6.00

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 12.20

Tolerance mm : \pm 0.05

Rack travel in mm : 8.45
Tolerance mm : \pm 0.10

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1347
guide sleeve
travel mm : 8.48
Tolerance mm : \pm 0.15

Rated speed rpm : 400
guide sleeve
travel mm : 1.71
Tolerance mm : \pm 0.20

Rated speed rpm : 880
guide sleeve
travel mm : 4.97
Tolerance mm : \pm 0.25

Rated speed rpm : 499
guide sleeve
travel mm : 2.75
Tolerance mm : \pm 0.25

Rated speed rpm : 549
guide sleeve
travel mm : 3.30
Tolerance mm : \pm 0.25

Rated speed rpm : 560
guide sleeve
travel mm : 3.37
Tolerance mm : \pm 0.25

Rated speed rpm : 1620
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1250

Rack travel in mm : 16.00
Tolerance mm : \pm 1.30

CONTROL LEVER

control lever
position degree : 63.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.20
Rated speed rpm : 1325
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1455
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1525

LOW IDLE

control lever
position degree : 20.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 9.00

Testing:

Rated speed rpm : 400
rack travel mm : 8.45
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 760
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 12.20
Tolerance mm : \pm 0.05

Rated speed rpm : 1250

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 750
Tolerance mm : \pm 0.05

Rated speed rpm : 550
Pressure hPa : -
rack travel mm : 11.25
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 550
Pressure hPa : 445
rack travel mm : 11.95
Tolerance mm : \pm 0.20

Pressure hPa : 390
rack travel mm : 11.60
Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : > 170
Rated speed rpm : > 300

Check
speed 1/min : < 190
Check
speed 1/min : < 340

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 15.50
Tolerance mm : \pm 0.50

LOW IDLE

Rack travel in mm : 8.45
Tolerance mm : \pm 0.10

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.09.97
Test oil : ISO 4113

Combination No. : 9 400 030 708

Injection pump
Pump designation : PES6A1000320/3RS3506
EP type number : 9 410 037 236

Governor
Governor design. : RQV400...1250AB1328R
Governor no. : F 002 A3C 003

Cust. part No. : TATA-CUMMINS

Customer-spec. information
Customer : CUMMINS
Motor : 6BT - 125 ps

TEST BENCH REQUIREMENTS

Inlet line : 1.1;

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 9 451 037 430

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 5.75
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.30
Tolerance mm : ± 0.05

Rack travel in mm : 6.40
Tolerance mm : \pm 0.10

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1308
guide sleeve
travel mm : 8.09
Tolerance mm : \pm 0.15

Rated speed rpm : 400
guide sleeve
travel mm : 1.71
Tolerance mm : \pm 0.20

Rated speed rpm : 860
guide sleeve
travel mm : 4.87
Tolerance mm : \pm 0.25

Rated speed rpm : 499
guide sleeve
travel mm : 2.75
Tolerance mm : \pm 0.25

Rated speed rpm : 549
guide sleeve
travel mm : 3.30
Tolerance mm : \pm 0.25

Rated speed rpm : 560
guide sleeve
travel mm : 3.37
Tolerance mm : \pm 0.25

Rated speed rpm : 1620
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1250
Rack travel in mm : 14.00
Tolerance mm : \pm 1.30

CONTROL LEVER

control lever
position degree : 58.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 9.30
Rated speed rpm : 1300
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1400
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1490

LOW IDLE

control lever
position degree : 15.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 9.00

Testing:

Rated speed rpm : 400
rack travel mm : 6.40
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 630
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 10.30
Tolerance mm : \pm 0.05

Rated speed rpm : 550
rack travel mm : 10.30
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 10.30
Tolerance mm : \pm 0.15

Start interlock

Rated speed rpm : > 170
Rated speed rpm : > 300

Check
speed 1/min : < 190
Check
speed 1/min : < 340

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.40
Tolerance mm : \pm 0.50

LOW IDLE

Rack travel in mm : 6.40
Tolerance mm : \pm 0.10

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.08.97
Test oil : ISO 4113

Combination No. : 0 402 066 713

Injection pump
Pump designation : PES6P110A120RS3357
EP type number : 0 412 016 754

Governor
Governor design. : RSV550...1100P2A677
Governor no. : 0 421 833 596

Cust. part No. : 3931957

Customer-spec. information
Customer : CDC
Motor : 6CTA ELITE
Power KW : 208.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

G06

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 8.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.00

Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 195.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 550

Rack travel in mm : 6.40
Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 29.5

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spreed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 195.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 99.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.00
Rated speed rpm : 1185

Tolerance 1/min : + 5

rack travel mm : 4.00

Rated speed rpm : 1285

Tolerance 1/min : + 5

rack travel mm : 0.85

Tolerance mm : + 0.55

Rated speed rpm : 1460

rack travel mm : 4.00

Rated speed rpm : 1320

Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 79.0
tolerance degree : + 4.0

Control lever difference

Grad : 20.0

tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 550

rack travel mm : 5.90

Tolerance mm : + 0.10

Rated speed rpm : 100
CRT mm min. : < 19.00

Testing:

Rated speed rpm : 550
rack travel mm : 6.40
Tolerance mm : \pm 0.20

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.00
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.50
Tolerance mm : \pm 0.20

Rated speed rpm : 1050
rack travel mm : 13.10
Tolerance mm : \pm 0.20

Rated speed rpm : 950
rack travel mm : 13.50
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1500

Rated speed rpm : 600
Pressure hPa : -
rack travel mm : 11.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 600
Pressure hPa : 1150
rack travel mm : 12.95
Tolerance mm : \pm 0.20

Pressure hPa : 975
rack travel mm : 12.15
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 218.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 154.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 550
Rack travel in mm : 6.40
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 29.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.09.97
Test oil : ISO 4113

Combination No. : 0 402 046 880

Injection pump
Pump designation : PES6P120B320RS3377
EP type number : 0 412 026 796

Governor
Governor design. : RQ750PA1304
Governor no. : 0 421 801 811

Cust. part No. :

Customer-spec. information

Customer : PERKINS
Motor : EAGLE2006TWG2
Power KW : 287.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 115
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 4- 2- 6- 3-
: 5

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.90
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 272.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rack travel in mm : 4.30
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : + 4.0
Check tolerance
cm³/1000S. : + 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 763
guide sleeve
travel mm : 4.57
Tolerance mm : + 0.15

Rated speed rpm : 790
guide sleeve
travel mm : 8.50
Tolerance mm : + 0.25

Rated speed rpm : 809
guide sleeve
travel mm : 12.00
Tolerance mm : + 0.25

Rated speed rpm : 860
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 272.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 34.0
tolerance degree : + 4.0

control lever
position degree : 94.0
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 765
rack travel mm : 11.90

Rated speed rpm : 785
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 900

Rated speed rpm : 766
rack travel mm : 11.90

Rated speed rpm : 786
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50

Rated speed rpm : 767
rack travel mm : 11.90

Rated speed rpm : 787
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.50

Tolerance mm : \pm 0.50

Rated speed rpm : 768
rack travel mm : 11.90

Rated speed rpm : 788
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50

Rated speed rpm : 769
rack travel mm : 11.90

Rated speed rpm : 789
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50

Rated speed rpm : 770
rack travel mm : 11.90

Rated speed rpm : 790
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.90
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.90
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 260.0
Tolerance
cm³/1000 strokes : \pm 25.0
Check tolerance
cm³/1000S. : \pm 29.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.09.97

Test oil : ISO 4113

Combination No. : 0 402 066 712

Injection pump

Pump designation : PES6P120A120RS3358

EP type number : 0 412 026 784

Governor

Governer design. : RSV475...1200F2A675

Governer no. : 0 421 833 594

Cust. part No. : 3283573

Customer-spec. information

Customer : CDC

Motor : 6BTA-590 ELITE

Power KW : 138.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity

min. l/h : 100

Tolerance l/h : ± 20.0

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 2.85

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 7.75

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.30
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 140.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 475

Rack travel in mm : 5.40
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 21.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure

hPa : 1500

Del. quantity
cm³/1000 strokes : 140.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 103.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.30
Rated speed rpm : 1245
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1310
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1475

rack travel mm : 4.00
Rated speed rpm : 1325
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 81.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 4.90
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 475
rack travel mm : 5.40
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 600
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 11.30
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 11.30
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.00
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 10.90
Tolerance mm : \pm 0.20

Pressure hPa : 560
rack travel mm : 9.55
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 157.0

Tolerance

cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance

cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Aneroid pressure

hPa : -

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 97.0

Tolerance

cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75

Del. quantity
cm³/1000 strokes : 170.0

Tolerance
cm³/1000 strokes : \pm 20.0

Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 475

Rack travel in mm : 5.40
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 21.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.09.97

Test oil : ISO 4113

Combination No. : 0 402 646 667

Injection pump

Pump designation : PE6P120A320RS7412

EP type number : 0 412 626 953

Governor

Governer design. : RQV275...1000PA1278K

Governer no. : 0 421 815 509

Cust. part No. : 1310221/1

Customer-spec. information

Customer : DAF

Motor : XF 315 M

Power KW : 315.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 140

Tolerance l/h : ± 20.0

Test nozzle holder assembly

: 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.45

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 13.40

Tolerance mm : ± 0.05

Del. quantity	
cm ³ /1000 strokes	: 318.0
Tolerance	
cm ³ /1000 strokes	: ± 1.0
Check tolerance	
cm ³ /1000S.	: ± 4.0
Spreed	
Tolerance	
cm ³ /1000 strokes	: 5.0
Check tolerance	
cm ³ /1000S.	: 9.0

Rated speed rpm	: 275
Rack travel in mm	: 3.80
Tolerance mm	: ± 0.10
Del. quantity	
cm ³ /1000 strokes	: 17.0
Tolerance	
cm ³ /1000 strokes	: ± 3.0
Check tolerance	
cm ³ /1000S.	: ± 6.0
Spreed	
Tolerance	
cm ³ /1000 strokes	: 8.0
Check tolerance	
cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1077
guide sleeve	
travel mm	: 10.24
Tolerance mm	: ± 0.15
Rated speed rpm	: 275
guide sleeve	
travel mm	: 2.04
Tolerance mm	: ± 0.20
Rated speed rpm	: 704
guide sleeve	
travel mm	: 6.53
Tolerance mm	: ± 0.25
Rated speed rpm	: 400

guide sleeve	
travel mm	: 3.92
Tolerance mm	: ± 0.25

Rated speed rpm	: 1310
guide sleeve	
travel mm	: 13.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1158

Rack travel in mm	: 12.00
Tolerance mm	: ± 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 980
Aneroid pressure	
hPa	: 1500
Del. quantity	
cm ³ /1000 strokes	: 318.0
Tolerance	
cm ³ /1000 strokes	: ± 1.0
Check tolerance	
cm ³ /1000S.	: ± 4.0
Spreed	
Tolerance	
cm ³ /1000 strokes	: 5.0
Check tolerance	
cm ³ /1000S.	: 9.0

CONTROL LEVER

control lever	
position degree	: 119.0
tolerance degree	: ± 4.0

RATED SPEED	
rack travel mm	: 12.40
Rated speed rpm	: 1040
Tolerance 1/min	: ± 5
Check	
speed 1/min	: ± 10

rack travel mm	: 4.00
Rated speed rpm	: 1145
Tolerance 1/min	: ± 15
Check	
speed 1/min	: ± 20

rack travel mm	: 0.50
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Tolerance mm : \pm 0.50
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : $>$ 6.60

Testing:

Rated speed rpm : 275
rack travel mm : 3.80
Tolerance mm : \pm 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 13.40
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.35
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 13.05
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 12.55
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 12.05
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 13.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 980
Pressure hPa : 1500
rack travel mm : 13.40
Tolerance mm : \pm 0.05

Rated speed rpm : 980
Pressure hPa : -
rack travel mm : 8.55
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 980

Pressure hPa : 520
rack travel mm : 12.20
Tolerance mm : \pm 0.05

Pressure hPa : 210
rack travel mm : 9.80
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 342.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 195.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 3.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.09.97

Test oil : ISO 4113

Combination No. : 0 402 646 668

Injection pump

Pump designation : PE6P120A320RS7412

EP type number : 0 412 626 953

Governor

Governer design. : RQV275...1000PA1278

: -1K

Governer no. : 0 421 815 510

Cust. part No. : 1310220/1

Customer-spec. information

Customer : DAF

Motor : XF 280 M

Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 145

Tolerance l/h : ± 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

G20

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.45

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 12.60

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 303.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 3.90

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1062

guide sleeve
travel mm : 10.04
Tolerance mm : \pm 0.15

Rated speed rpm : 275

guide sleeve
travel mm : 2.04
Tolerance mm : \pm 0.20

Rated speed rpm : 697

guide sleeve
travel mm : 6.48
Tolerance mm : \pm 0.25

Rated speed rpm : 400

guide sleeve

travel mm : 3.92

Tolerance mm : \pm 0.25

Rated speed rpm : 1310

guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever

position degree : - 1

Rated speed rpm : 1171

Rack travel in mm : 10.70

Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 303.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever

position degree : 118.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.35

Rated speed rpm : 1050

Tolerance 1/min : \pm 5

Check
speed 1/min : \pm 10

rack travel mm : 4.00

Rated speed rpm : 1150

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

rack travel mm : 0.50

Tolerance mm : \pm 0.50
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175
CRT mm min. : $>$ 6.50

Testing:

Rated speed rpm : 275
rack travel mm : 3.90
Tolerance mm : \pm 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 12.60
Tolerance mm : \pm 0.05

Rated speed rpm : 980
rack travel mm : 12.35
Tolerance mm : \pm 0.10

Rated speed rpm : 900
rack travel mm : 12.60
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 12.30
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 11.80
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 11.40
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 12.35
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 775
Pressure hPa : 1500
rack travel mm : 12.65
Tolerance mm : \pm 0.05

Rated speed rpm : 775
Pressure hPa : -
rack travel mm : 8.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 775
Pressure hPa : 450
rack travel mm : 12.10
Tolerance mm : \pm 0.05

Pressure hPa : 170
rack travel mm : 9.90
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 980
Del. quantity
cm³/1000 strokes : 272.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 184.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 3.90
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.09.97
Test oil : ISO 4113
Combination No. : 0 402 646 967
Injection pump
Pump designation : PE6P130A720RS7150
: -10
EP type number : 0 412 636 831
Governor
Governor design. : RQV250...900PA881-1
Governor no. : 0 421 813 982

Cust. part No. : 864988-PO4 v.06.97

Customer-spec. information
Customer : PENTA
Motor : TAMD 162 C

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 2.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 9.40
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.60
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 336.0

Tolerance
cm³/1000 strokes : + 1.5

Check tolerance
cm³/1000s. : + 5.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000s. : 10.0

Rated speed rpm : 250

Rack travel in mm : 4.20
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 19.5

Tolerance
cm³/1000 strokes : + 2.5

Check tolerance
cm³/1000s. : + 5.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 925
guide sleeve
travel mm : 7.70
Tolerance mm : + 0.10

Rated speed rpm : 250
guide sleeve
travel mm : 1.10
Tolerance mm : + 0.20

Rated speed rpm : 350
guide sleeve
travel mm : 2.30

Tolerance mm : + 0.30

Rated speed rpm : 700
guide sleeve
travel mm : 4.80
Tolerance mm : + 0.30

Rated speed rpm : 985
guide sleeve
travel mm : 8.60
Tolerance mm : + 0.20

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 980

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 336.0

Tolerance
cm³/1000 strokes : + 1.5

Check tolerance
cm³/1000s. : + 5.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000s. : 10.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 10.60
Rated speed rpm : 930
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1000
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50

Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 67.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 150
CRT mm min. : $>$ 6.00

Testing:

Rated speed rpm : 250
rack travel mm : 4.20
Tolerance mm : \pm 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.60
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 11.60
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.40
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 400
rack travel mm : 9.80
Tolerance mm : \pm 0.20

Pressure hPa : 680
rack travel mm : 11.30
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 228.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 5.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 4.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 19.5
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.09.97
Test oil : ISO 4113

Combination No. : 0 402 744 803B

Injection pump
Pump designation : PES4P120A320RS7312
: -1
EP type number : 0 412 724 803

Governor
Governor design. : RQV400...1200PA1131
: -1
Governor no. : 0 421 814 154

Cust. part No. : 51.11103-7579

Customer-spec. information
Customer : MAN
Motor : D0824 LOH 05
Power KW : 114.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. L/h : 110
Tolerance L/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5

Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.00
Tolerance mm : ± 0.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 209.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 400

Rack travel in mm : 4.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 45.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1261
guide sleeve
travel mm : 10.26
Tolerance mm : ± 0.15

Rated speed rpm : 400
guide sleeve
travel mm : 2.21
Tolerance mm : ± 0.20

Rated speed rpm : 822
guide sleeve
travel mm : 5.79
Tolerance mm : ± 0.25

Rated speed rpm : 500

guide sleeve
travel mm : 3.53
Tolerance mm : ± 0.25

Rated speed rpm : 1490
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 209.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 302.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.80
Rated speed rpm : 1245
Tolerance 1/min : ± 8

rack travel mm : 4.00
Rated speed rpm : 1332
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1470

LOW IDLE

control lever
position degree : 262.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
CRT mm min. : > 8.85

Testing:

Rated speed rpm : 400
rack travel mm : 4.80
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.80
Tolerance mm : \pm 0.05

Rated speed rpm : 1200
rack travel mm : 12.80
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 12.80
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 12.80
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.50
Tolerance mm : \pm 0.15

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 450
rack travel mm : 11.80
Tolerance mm : \pm 0.20

Pressure hPa : 140
rack travel mm : 8.90
Tolerance mm : \pm 0.15

Start interlock

Rated speed rpm : < 280
Rated speed rpm : > 320

Check
speed 1/min : < 260
Check
speed 1/min : > 340

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 206.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 217.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 136.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 4.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 45.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.09.97

Test oil : ISO 4113

Combination No. : 0 402 746 604

Injection pump

Pump designation : PES6P120A720RS7366

EP type number : 0 412 726 933

Governor

Governer design. : RQV275...1100PA1208

: -1K

Governer no. : 0 421 815 492

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE

Motor : 8460.41C-3000

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 160

Tolerance l/h : ± 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

H03

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 2.85

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Check

tolerance °NW : ± 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 11.30

Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 201.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 6.40
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1180
guide sleeve

travel mm : 10.07
Tolerance mm : \pm 0.15

Rated speed rpm : 275

guide sleeve
travel mm : 1.70

Tolerance mm : \pm 0.20

Rated speed rpm : 802

guide sleeve
travel mm : 6.49

Tolerance mm : \pm 0.25

Rated speed rpm : 460

guide sleeve
travel mm : 3.77

Tolerance mm : \pm 0.25

Rated speed rpm : 1440

guide sleeve

travel mm : 13.50

Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever

position degree : - 1

Rated speed rpm : 1295

Rack travel in mm : 10.65

Tolerance mm : \pm 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600

Aneroid pressure

hPa : 1200

Del. quantity

cm³/1000 strokes : 201.0

Tolerance

cm³/1000 strokes : \pm 1.0

Check tolerance

cm³/1000S. : \pm 4.0

Speed

Tolerance

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 9.0

CONTROL LEVER

control lever

position degree : 118.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.50

Rated speed rpm : 1145

Tolerance 1/min : \pm 5

Check

speed 1/min : \pm 10

rack travel mm : 4.00

Rated speed rpm : 1245

Tolerance 1/min : \pm 15

Check

speed 1/min : \pm 20

rack travel mm : 0.50

Tolerance mm : \pm 0.50

Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : $>$ 7.90

Testing:

Rated speed rpm : 275
rack travel mm : 6.40
Tolerance mm : \pm 0.10

Rated speed rpm : 315

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 11.30
Tolerance mm : \pm 0.05

Rated speed rpm : 1100
rack travel mm : 11.55
Tolerance mm : \pm 0.15

Rated speed rpm : 800
rack travel mm : 11.35
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 11.30
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.30
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

H05

Pressure hPa : 210
rack travel mm : 9.80
Tolerance mm : \pm 0.30

Pressure hPa : 300
rack travel mm : 10.65
Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : $>$ 180
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 160
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 234.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100
rack travel mm : 11.90
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 6.40
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.09.97
Test oil : ISO 4113

Combination No. : 0 402 746 910D

Injection pump
Pump designation : PES6P120A720LS7209
: -1
EP type number : 0 412 726 849

Governor
Governor design. : RQV300...1100PA1006K
Governor no. : 0 421 315 283

Cust. part No. : 51.11103-7072

Customer-spec. information

Customer : MAN
Motor : D 2866 LE 40
Power KW : 300.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 089

H07

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.00
Tolerance mm : ± 0.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.40
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 234.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.00

Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 23.0

Tolerance

cm3/1000 strokes : + 3.0

Check tolerance

cm3/1000S. : + 6.0

Spread

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1156

guide sleeve

travel mm : 10.05

Tolerance mm : + 0.15

Rated speed rpm : 300

guide sleeve

travel mm : 1.77

Tolerance mm : + 0.20

Rated speed rpm : 832

guide sleeve

travel mm : 6.98

Tolerance mm : + 0.25

Rated speed rpm : 500

guide sleeve

travel mm : 3.78

Tolerance mm : + 0.25

Rated speed rpm : 1420

guide sleeve

travel mm : 13.50

Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

H08

Rated speed rpm : 1100

Aneroid pressure

hPa : 1200

Del. quantity

cm3/1000 strokes : 234.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000S. : + 4.0

Spread

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000S. : 9.0

CONTROL LEVER

control lever

position degree : 118.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.40

Rated speed rpm : 1145

Tolerance 1/min : + 5

rack travel mm : 4.00

Rated speed rpm : 1242

Tolerance 1/min : + 15

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1400

LOW IDLE

control lever

position degree : 72.0

tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.27

Testing:

Rated speed rpm : 300

rack travel mm : 5.00

Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.40
Tolerance mm : \pm 0.05

Rated speed rpm : 900
rack travel mm : 11.40
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 10.80
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1200
rack travel mm : 12.40
Tolerance mm : \pm 0.05

Rated speed rpm : 1100
Pressure hPa : -
rack travel mm : 9.15
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 300
rack travel mm : 10.55
Tolerance mm : \pm 0.15

Pressure hPa : 100
rack travel mm : 9.45
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 900

Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 207.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 167.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.09.97
Test oil : ISO 4113
Combination No. : 0 402 746 910E
Injection pump
Pump designation : PES6P120A720LS7209
: -1
EP type number : 0 412 726 849
Governor
Governor design. : RQV300...1100PA1006K
Governor no. : 0 421 815 283

Cust. part No. : 51.11103-7073

Customer spec. information

Customer : MAN
Motor : D 2866 LXE 40
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.00
Tolerance mm : ± 0.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.90
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 219.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.00

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1156
guide sleeve
travel mm : 10.05
Tolerance mm : ± 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 1.77
Tolerance mm : ± 0.20

Rated speed rpm : 832
guide sleeve
travel mm : 6.98
Tolerance mm : ± 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 3.78
Tolerance mm : ± 0.25

Rated speed rpm : 1420
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 219.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.90
Rated speed rpm : 1145
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1236
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 72.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 7.27

Testing:

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.90
Tolerance mm : \pm 0.05

Rated speed rpm : 900
rack travel mm : 10.70
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 10.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1200
rack travel mm : 11.90
Tolerance mm : \pm 0.05

Rated speed rpm : 1100
Pressure hPa : -
rack travel mm : 9.15
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 300
rack travel mm : 10.55
Tolerance mm : \pm 0.15

Pressure hPa : 100
rack travel mm : 9.45
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 900

Del. quantity
cm³/1000 strokes : 196.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 192.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 167.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.09.97
Test oil : ISO 4113
Combination No. : 0 402 746 910F
Injection pump
Pump designation : PES6P120A720LS7209
: -1
EP type number : 0 412 726 849
Governor
Governor design. : RQV300...1100PA1006K
Governor no. : 0 421 815 283

Cust. part No. : 51.11103-7084

Customer-spec. information
Customer : MAN
Motor : D 2866 LXE 40
Power KW : 294.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089

H15

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 4.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 13.00
Tolerance mm : ± 0.50
Firing order : 6- 2- 4- 1- 5-
: 3
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1050
Rack travel in mm : 13.10
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 257.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed

Tolerance	
cm ³ /1000 strokes	: 5.0
Check tolerance	
cm ³ /1000S.	: 9.0

Rated speed rpm	: 300
Rack travel in mm	: 5.00
Tolerance mm	: + 0.10
Del. quantity	
cm ³ /1000 strokes	: 23.0
Tolerance	
cm ³ /1000 strokes	: + 3.0
Check tolerance	
cm ³ /1000S.	: + 6.0
Spreed	
Tolerance	
cm ³ /1000 strokes	: 8.0
Check tolerance	
cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1107
guide sleeve	
travel mm	: 10.68
Tolerance mm	: + 0.15

Rated speed rpm	: 300
guide sleeve	
travel mm	: 1.61
Tolerance mm	: + 0.20

Rated speed rpm	: 817
guide sleeve	
travel mm	: 7.02
Tolerance mm	: + 0.25

Rated speed rpm	: 500
guide sleeve	
travel mm	: 3.62
Tolerance mm	: + 0.25

Rated speed rpm	: 1290
guide sleeve	
travel mm	: 13.50
Tolerance mm	: + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1050
Aneroid pressure	
hPa	: 1200
Del. quantity	
cm ³ /1000 strokes	: 257.0
Tolerance	
cm ³ /1000 strokes	: + 1.0
Check tolerance	
cm ³ /1000S.	: + 4.0
Spreed	
Tolerance	
cm ³ /1000 strokes	: 5.0
Check tolerance	
cm ³ /1000S.	: 9.0

CONTROL LEVER

control lever	
position degree	: 120.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 12.10
Rated speed rpm	: 1095
Tolerance 1/min	: + 5

rack travel mm	: 4.00
Rated speed rpm	: 1172
Tolerance 1/min	: + 15

rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1300

LOW IDLE

control lever	
position degree	: 72.0
tolerance degree	: + 4.0

Setting point w/out bumper spring

Rated speed rpm	: 200
CRT mm min.	: > 7.18

Testing:

Rated speed rpm	: 300
rack travel mm	: 5.00
Tolerance mm	: + 0.10

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 13.10
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 12.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 11.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1050
Pressure hPa : 1200
rack travel mm : 13.10
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
Pressure hPa : -
rack travel mm : 9.15
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1050

Pressure hPa : 300
rack travel mm : 10.55
Tolerance mm : \pm 0.15

Pressure hPa : 100
rack travel mm : 9.45
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800

Del. quantity
cm³/1000 strokes : 238.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 242.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 167.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.09.97
Test oil : ISO 4113
Combination No. : 0 402 746 910G
Injection pump
Pump designation : PES6P120A720LS7209
 : -1
EP type number : 0 412 726 849
Governor
Governor design. : RQV300...1100PA1006K
Governor no. : 0 421 815 283
Cust. part No. : 51.11103-7074

Customer-spec. information

Customer : MAN
Motor : D 2866 LXE 40
Power KW : 250.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 4.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 13.00
Tolerance mm : ± 0.50
Firing order : 6- 2- 4- 1- 5-
 : 3
Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 900
Rack travel in mm : 12.00
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 229.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.00

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 958
guide sleeve
travel mm : 9.68
Tolerance mm : + 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 1.61
Tolerance mm : + 0.20

Rated speed rpm : 744
guide sleeve
travel mm : 6.92
Tolerance mm : + 0.25

Rated speed rpm : 490
guide sleeve
travel mm : 3.75
Tolerance mm : + 0.25

Rated speed rpm : 1190
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 229.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 117.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 11.00
Rated speed rpm : 945
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1019
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 72.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 7.18

Testing:

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 12.00
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 11.40
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 10.70
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1200
rack travel mm : 12.00
Tolerance mm : \pm 0.05

Rated speed rpm : 900
Pressure hPa : -
rack travel mm : 9.15
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 900

Pressure hPa : 300
rack travel mm : 10.55
Tolerance mm : \pm 0.15

Pressure hPa : 100
rack travel mm : 9.45
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700

Del. quantity
cm³/1000 strokes : 228.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 167.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.09.97
Test oil : ISO 4113
Combination No. : 9 400 085 240
Injection pump
Pump designation : PES4A90D320RS2702
EP type number : 9 400 083 095
Governor
Governor design. : RSV350...1150A2C2129
 : -4R
Governor no. : 9 420 083 268
Cust. part No. :

Customer-spec. information

Customer : MWM
Motor : D 229-4
Power KW : 75.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 003
Outside diameter : 6.0

H23

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.70
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Beginning of delivery difference

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 9.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 64.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance cm ³ /1000S.	: +- 2.5
<hr/>	
Spreed	
Tolerance cm ³ /1000 strokes	: 3.0
<hr/>	
Check tolerance cm ³ /1000S.	: 7.0
<hr/>	

Rated speed rpm	: 350
Rack travel in mm	: 5.70
Tolerance mm	: +- 0.10
Del. quantity cm ³ /1000 strokes	: 12.0
Tolerance cm ³ /1000 strokes	: +- 2.0
Check tolerance cm ³ /1000S.	: +- 4.0
Spreed	
Tolerance cm ³ /1000 strokes	: 4.5
Check tolerance cm ³ /1000S.	: 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.65
Tolerance mm	: +- 0.35
governor spring pre-tension click setting x	: 4.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1150
Aneroid pressure hPa	: -
Del. quantity cm ³ /1000 strokes	: 64.0
Tolerance cm ³ /1000 strokes	: +- 0.5

Check tolerance cm ³ /1000S.	: +- 2.5
Spreed	
Tolerance cm ³ /1000 strokes	: 3.0
Check tolerance cm ³ /1000S.	: 7.0

CONTROL LEVER

control lever position degree	: 49.0
tolerance degree	: +- 4.0

control lever position degree	: 99.0
tolerance degree	: +- 4.0

RATED SPEED

rack travel mm	: 8.00
Rated speed rpm	: 1195
Tolerance 1/min	: +- 5

rack travel mm	: 4.00
Rated speed rpm	: 1245
Tolerance 1/min	: +- 15

rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1400

LOW IDLE

control lever position degree	: 74.0
tolerance degree	: +- 4.0

control lever position degree	: 24.0
tolerance degree	: +- 4.0

Setting point w/out bumper spring

Rated speed rpm	: 350
rack travel mm	: 5.20
Tolerance mm	: +- 0.10

Rated speed rpm	: 100
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CRT mm min.	: > 19.00
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Testing:

Rated speed rpm	: 350
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rack travel mm : 5.70
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 590
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 9.05
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 10.15
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 9.80
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 9.25
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 62.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.09.97
Test oil : ISO 4113
Combination No. : 9 400 085 241
Injection pump
Pump designation : PES3A90D320RS2703
EP type number : 9 400 083 096
Governor
Governor design. : RSV350...1150A2C2129
: -4R
Governor no. : 9 420 083 268
Cust. part No. :

Customer-spec. information

Customer : MWM
Motor : D 229-3
Power KW : 42.7

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 003
Outside diameter : 6.0

H26

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.70
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 3

Phasing : 0-120-240
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Beginning of delivery difference

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 8.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 58.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : + 2.5

Spreed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 5.0

Rated speed rpm : 350

Rack travel in mm : 5.60

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.0

Spreed

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 58.5
Tolerance
cm³/1000 strokes : + 0.5

Check tolerance
cm³/1000S. : + 2.5

Spreed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 5.0

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 7.50
Rated speed rpm : 1195
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1235
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 72.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 5.10
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 350
rack travel mm : 5.60
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 580
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 8.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 9.45
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 9.00
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

Aneroid pressure

hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 61.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.06.97
Test oil : ISO 4113
Combination No. : 0 400 864 107
Injection pump
Pump designation : PES4A95D410/3RS2913
EP type number : 0 410 894 986
Governor
Governor design. : RSV325...900A1C859L
Governor no. : 0 420 232 622

Cust. part No. : 0423 2225 KY

Customer-spec. information
Customer : KHD-DMI
Motor : F4L912/Neu.compr

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0
x inside diameter : 2.0

J01

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 2

Phasing : 0-90-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 11.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 80.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance cm3/1000S.	:	8.0
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Rated speed rpm	:	325
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Rack travel in mm	:	7.90
Tolerance mm	:	+ 0.10

Del. quantity cm3/1000 strokes	:	11.5
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Tolerance cm3/1000 strokes	:	+ 2.0
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Check tolerance cm3/1000S.	:	+ 4.5
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Spread Tolerance	:	5.5
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cm3/1000 strokes	:	5.5
------------------	---	-----

Check tolerance cm3/1000S.	:	9.0
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(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	:	FREE
Rated speed rpm	:	800

Rack travel in mm	:	0.50
Tolerance mm	:	+ 0.20

governor spring pre-tension click setting x	:	4.25
---	---	------

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	850
Aneroid pressure hPa	:	-

Del. quantity cm3/1000 strokes	:	80.0
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Tolerance cm3/1000 strokes	:	+ 1.0
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Check tolerance cm3/1000S.	:	+ 3.0
-------------------------------	---	-------

Spread Tolerance	:	3.5
---------------------	---	-----

cm3/1000 strokes	:	3.5
------------------	---	-----

Check tolerance cm3/1000S.	:	8.0
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CONTROL LEVER

control lever position degree	:	96.0
tolerance degree	:	+ 4.0

RATED SPEED

rack travel mm	:	10.80
Rated speed rpm	:	895

Tolerance 1/min	:	+ 5
-----------------	---	-----

rack travel mm	:	4.00
----------------	---	------

Rated speed rpm	:	940
-----------------	---	-----

Tolerance 1/min	:	+ 10
-----------------	---	------

rack travel mm	:	0.85
----------------	---	------

Tolerance mm	:	+ 0.55
--------------	---	--------

Rated speed rpm	:	1110
-----------------	---	------

rack travel mm	:	4.00
----------------	---	------

Rated speed rpm	:	960
-----------------	---	-----

Tolerance 1/min	:	+ 15
-----------------	---	------

LOW IDLE

control lever position degree	:	75.0
tolerance degree	:	+ 4.0

Setting point w/out bumper spring

Rated speed rpm	:	325
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rack travel mm	:	7.40
----------------	---	------

Tolerance mm	:	+ 0.10
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Rated speed rpm	:	100
-----------------	---	-----

CRT mm min.	:	> 19.50
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Testing:

Rated speed rpm	:	325
-----------------	---	-----

rack travel mm	:	7.90
----------------	---	------

Tolerance mm	:	+ 0.10
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rack travel mm	:	2.00
----------------	---	------

Rated speed rpm	:	440
-----------------	---	-----

Tolerance 1/min	:	+ 30
-----------------	---	------

TORQUE CONTROL

Rated speed rpm	:	850
-----------------	---	-----

rack travel mm	:	11.80
----------------	---	-------

Tolerance mm	:	+ 0.05
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Rated speed rpm : 500

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 7.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 11.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.09.97

Test oil : ISO 4113

Combination No. : 0 402 076 773

Injection pump

Pump designation : PES6P100A320LS3342

EP type number : 0 412 006 710

Governor

Governor design. : RSV415...1100P8A595

Governor no. : 0 421 833 461

Cust. part No. : 1824625C91

Customer-spec. information

Customer : NAVISTAR

Motor : DT-530

Power KW : 168.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 076

Inlet press. bar : 2.8

Tolerance bar : ± 0.1

Test nozzle holder assembly

: 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0

Tolerance bar : ± 1.0

Prestroke mm : 3.00

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.25

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 146.5

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 415

Rack travel in mm : 5.50
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5

Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 146.5
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 3.0
Speed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 106.0
tolerance degree : +- 6.0

RATED SPEED
rack travel mm : 12.20
Rated speed rpm : 1150
Tolerance 1/min : +- 5
Check
speed 1/min : +- 10

rack travel mm : 4.00
Rated speed rpm : 1200
Tolerance 1/min : +- 5
Check
speed 1/min : +- 10

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1205
Tolerance 1/min : +- 5
Check
speed 1/min : +- 10

LOW IDLE

control lever
position degree : 79.0
tolerance degree : +- 6.0

Setting point w/out bumper spring

Rated speed rpm : 100
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 415
rack travel mm : 5.50
Tolerance mm : +- 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.25
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 14.20
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.90
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 590
rack travel mm : 12.60
Tolerance mm : \pm 0.20

Pressure hPa : 270
rack travel mm : 10.20
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 172.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 78.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 415

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.09.97
Test oil : ISO 4113

Combination No. : 0 402 736 842AA

Injection pump
Pump designation : PES6P120A12CRS7281
EP type number : 0 412 815 344

Governor
Governor design. :
Governor no. :

Cust. part No. : 3933296

Customer-spec. information
Customer : CDC
Motor : 6BTA-A
Power KW : 119.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

J07

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 6.25
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 153.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 420

Rack travel in mm : 6.00

Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 15.5

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 5.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1329
guide sleeve
travel mm : 7.83
Tolerance mm : + 0.15

Rated speed rpm : 400
guide sleeve
travel mm : 1.44
Tolerance mm : + 0.20

Rated speed rpm : 939
guide sleeve
travel mm : 5.18
Tolerance mm : + 0.25

Rated speed rpm : 640
guide sleeve
travel mm : 3.56
Tolerance mm : + 0.25

Rated speed rpm : 1690
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 800
Del. quantity
cm³/1000 strokes : 153.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 117.0
tolerance degree : + 6.0

RATED SPEED
rack travel mm : 12.30
Rated speed rpm : 1325
Tolerance 1/min : + 15

rack travel mm : 4.00
Rated speed rpm : 1475
Tolerance 1/min : + 5

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 71.0
tolerance degree : + 6.0

Control lever difference
Grad : 46.0
tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 400
CRT mm min. : > 5.80

Testing:

Rated speed rpm : 420
rack travel mm : 6.00
Tolerance mm : \pm 0.20

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.35
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 12.00
Tolerance mm : \pm 0.20

Rated speed rpm : 500
rack travel mm : 11.60
Tolerance mm : \pm 0.20

Rated speed rpm : 900
rack travel mm : 12.40
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200

Rated speed rpm : 1250
Pressure hPa : -
rack travel mm : 9.15
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 310
rack travel mm : 12.30
Tolerance mm : \pm 0.30

Pressure hPa : 175
rack travel mm : 10.20
Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 280

Check
speed 1/min : > 80
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 800
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 133.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure

hPa : -
Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 84.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 25.0

LOW IDLE

Rated speed rpm : 420

Rack travel in mm : 6.00

Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 15.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 19.09.97

Test oil : ISO 4113

Combination No. : 0 402 736 866AA

Injection pump

Pump designation : PES6P120A12ORS7349

EP type number : 0 412 726 920

Governor

Governor design. :

Governor no. :

Cust. part No. : 3933299

Customer-spec. information

Customer : CDC

Motor : 6BTA-A

Power KW : 156.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Tolerance bar : ± 0.1

Test nozzle holde
assembly

: 1 688 901 103

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0

Tolerance bar : ± 1.0

Prestroke mm : 3.60

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 12.50

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 6.00

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.95

Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 177.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 420

Rack travel in mm : 5.60

Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1250

guide sleeve
travel mm : 7.10

Rated speed rpm : 400

guide sleeve
travel mm : 1.50

Rated speed rpm : 800

guide sleeve
travel mm : 4.50

Rated speed rpm : 550

guide sleeve
travel mm : 3.30

Rated speed rpm : 1500

guide sleeve
travel mm : 9.40

GUIDE SLEEVE POSITION

control lever
position degree : - 1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure
hPa : 800

Del. quantity
cm³/1000 strokes : 177.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : ± 6.0

RATED SPEED

rack travel mm : 12.90

Rated speed rpm : 1320

Tolerance 1/min : ± 15

Check
speed 1/min : ± 20

rack travel mm : 4.00

Rated speed rpm : 1475

Tolerance 1/min : ± 5

Check
speed 1/min : ± 10

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 72.0
tolerance degree : ± 6.0

Control lever difference
Grad : 48.0
tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 300
CRT mm min. : > 8.90

Testing:

Rated speed rpm : 420
rack travel mm : 5.60
Tolerance mm : ± 0.20

Rated speed rpm : 420

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.95
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 12.00
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 10.90
Tolerance mm : ± 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 800

Rated speed rpm : 1250
Pressure hPa : -
rack travel mm : 9.00
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 520
rack travel mm : 12.90
Tolerance mm : ± 0.30

Pressure hPa : 240
rack travel mm : 10.30
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 330

Check
speed 1/min : > 80
Check
speed 1/min : < 340

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 800
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 71.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 25.0

LOW IDLE

Rated speed rpm : 420

Rack travel in mm : 5.60
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.09.97
Test oil : ISO 4113

Combination No. : 0 400 075 918

Injection pump
Pump designation : PES5M55C320RS191
EP type number : 0 410 055 951

Governor
Governor design. : RSF385/2000M88
Governor no. : 0 420 021 293

Cust. part No. :

Customer-spec. information
Customer : DPICO
Motor : OM662-D29LA
Power KW : 88.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holder
assembly : 1 688 901 111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 1.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

Start of delivery blocking

°NW after s.o.d. : 16.50
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 53.1

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

Rated speed rpm : 385

Rack travel in mm : 5.80

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 8.5

Tolerance
cm³/1000 strokes : \pm 0.5

Spreed
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Ref. pressure
ALDA / ADA hPa : 1600

Del. quantity
cm³/1000 strokes : 53.1

Tolerance
cm³/1000 strokes : \pm 0.5

Check tolerance
cm³/1000S. : \pm 1.5

Spreed
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

Rated speed rpm : 2250
rack travel mm : 8.75
Tolerance mm : \pm 0.20

Rated speed rpm : 2600
rack travel mm : 0.50
Tolerance mm : \pm 0.60

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.85

LOW IDLE

control lever
position degree : 11.0

Setting point w/out bumper spring

Rated speed rpm : 385

rack travel mm : 5.80

SET IDLE AUXILIARY SPRING

Rated speed rpm : 500

rack travel mm : 3.90

Tolerance mm : \pm 0.10

Load pick-up

Rated speed rpm : 200

rack travel mm : 12.50

Rated speed rpm : 1000

CRT mm max. : 1.85

rack travel mm : 5.80

Rated speed rpm : 385

TORQUE CONTROL

Rated speed rpm : 1000

rack travel mm : 13.75

Tolerance mm : \pm 0.05

Rated speed rpm : 1700

rack travel mm : 13.45

Tolerance mm : \pm 0.10

Rated speed rpm : 2000

rack travel mm : 12.95

Tolerance mm : \pm 0.10

Rated speed rpm : 1000

rack travel mm : 11.80

Tolerance mm : \pm 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
 Ref. pressure
 ALDA / ADA hPa : 1400
 rack travel mm : 0.30
 Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1000
 Ref. pressure
 ALDA / ADA hPa : 1100
 rack travel mm : 1.95
 Tolerance mm : \pm 0.10

Ref. pressure
 ALDA / ADA hPa : 750
 rack travel mm : 3.80
 Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
 ALDA / ADA hPa : 1600
 Rated speed rpm : 1700
 Del. quantity
 cm³/1000 strokes : 53.8
 Tolerance
 cm³/1000 strokes : \pm 0.8
 Check tolerance
 cm³/1000S. : \pm 1.8
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

Ref. pressure
 ALDA / ADA hPa : 1600
 Rated speed rpm : 2000
 Spreed
 Del. quantity
 cm³/1000 strokes : 52.1
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 2.0
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 1000

Del. quantity
 cm³/1000 strokes : 43.2
 Tolerance
 cm³/1000 strokes : \pm 0.5
 Check tolerance
 cm³/1000S. : \pm 1.5
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 1000
 Del. quantity
 cm³/1000 strokes : 43.2
 Tolerance
 cm³/1000 strokes : \pm 0.5
 Check tolerance
 cm³/1000S. : \pm 1.5
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

HIGH IDLE

Ref. pressure
 ALDA / ADA hPa : 1600
 Rated speed rpm : 2250
 rack travel mm : 8.75
 Tolerance mm : \pm 0.20
 Del. quantity
 cm³/1000 strokes : 32.9
 Tolerance
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000S. : \pm 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 21.50
 Tolerance mm : \pm 1.50
 Del. quantity
 cm³/1000 strokes : 58.3
 Tolerance
 cm³/1000 strokes : \pm 4.0
 Check tolerance
 cm³/1000S. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

LOW IDLE

Rated speed rpm : 385
Del. quantity
cm³/1000 strokes : 9.5
Check tolerance
cm³/1000S. : \pm 2.3
Speed
Check tolerance
cm³/1000S. : 1.5

control lever
position degree : > 45.00

control lever
position degree : < 42.50

SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever
position degree : 11.0

Rated speed rpm : 400

Rack travel in mm : 8.85
Tolerance mm : \pm 0.80
Del. quantity
cm³/1000 strokes : 25.3
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 5.0
Vacuum hPa : 400.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 385
Vacuum hPa : -450.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 19.09.97

Test oil : ISO 4113

Combination No. : 0 402 074 700

Injection pump

Pump designation : PES4P110B720RS3383

EP type number : 0 412 014 701

Governor

Governor design. : RSV300...1100P1A667

Governor no. : 0 421 833 582

Cust. part No. : 9880216

Customer-spec. information

Customer : LIEBHERR

Motor : D 924 TI-E A2

Power KW : 149.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Tolerance L/h : ± 10.0

Test nozzle holder assembly

: 1 688 901 101

Opening pressure bar

: 207.0

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.20

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 4- 2- 1- 3

Phasing : 0-90-180-270

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.75

Barrel no. : 4

BASIC SETTING

Rated speed rpm : 890

Rack travel in mm : 13.85

Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 203.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.5

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 500

Rack travel in mm : 4.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 24.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.5

Speed

Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 890

Aneroid pressure
hPa : 1410

Del. quantity
cm³/1000 strokes : 203.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.5

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 100.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.85
Rated speed rpm : 910
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 990
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1200

rack travel mm : 4.00
Rated speed rpm : 995
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 80.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 500
rack travel mm : 2.40
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 500
rack travel mm : 4.20
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 890
rack travel mm : 13.85
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 13.85
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 13.85
Tolerance mm : \pm 0.10

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 550
Pressure hPa : 1410
rack travel mm : 13.85
Tolerance mm : \pm 0.10

Rated speed rpm : 550
Pressure hPa : -
rack travel mm : 11.40
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 870
rack travel mm : 13.00
Tolerance mm : \pm 0.05

Pressure hPa : 775
rack travel mm : 12.00
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1410
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure

hPa : 1410
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 216.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure

hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 177.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 500

Rack travel in mm : 4.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.5
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.09.97
Test oil : ISO 4113

Combination No. : 0 402 074 700A

Injection pump
Pump designation : PES4P110B720RS3383
EP type number : 0 412 014 701

Governor
Governor design. : RSV300...1100P1A667
Governor no. : 0 421 833 582

Cust. part No. : 9880216

Customer-spec. information
Customer : LIEBHERR
Motor : D 924 TI-E A2
Power kW : 149.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 207.0
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 4- 2- 1- 3

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 4

BASIC SETTING

Rated speed rpm : 890

Rack travel in mm : 13.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 203.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.5

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 500

Rack travel in mm : 4.20

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 24.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.5

Spread

Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 890

Aneroid pressure
hPa : 1410

Del. quantity
cm³/1000 strokes : 203.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.5

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 100.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.85

Rated speed rpm : 910

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 990

Tolerance 1/min : ± 15

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1200

rack travel mm : 4.00

Rated speed rpm : 995

Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 80.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 500

rack travel mm : 2.40

Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 500

rack travel mm : 4.20

Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 890

rack travel mm : 13.85
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 13.85
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 13.85
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1410
rack travel mm : 13.85
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.40
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 870
rack travel mm : 13.00
Tolerance mm : \pm 0.05

Pressure hPa : 775
rack travel mm : 12.00
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1410
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1410
Rated speed rpm : 700

Del. quantity
cm³/1000 strokes : 216.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 177.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 500

Rack travel in mm : 4.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.5
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.09.97
Test oil : ISO 4113

Combination No. : 0 402 646 742

Injection pump
Pump designation : PE6P120A320LS7837-2
EP type number : 0 412 626 943

Governor
Governor design. : RQ300/1100PA1272
Governor no. : 0 421 801 804

Cust. part No. : 0270743002

Customer-spec. information
Customer : MB-NFZ
Motor : OM441 LA
Power KW : 228.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 120
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 6

CRT ZERO POSITION

Rack travel in mm : 12.50

Tolerance mm : \pm 0.10

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 191.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1146
guide sleeve
travel mm : 6.54
Tolerance mm : \pm 0.15

Rated speed rpm : 300

guide sleeve
travel mm : 2.24
Tolerance mm : \pm 0.20

Rated speed rpm : 1100
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 429
guide sleeve
travel mm : 4.97
Tolerance mm : \pm 0.10

Rated speed rpm : 550
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1340
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 650

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 600

Del. quantity
cm³/1000 strokes : 191.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 94.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.70
Rated speed rpm : 1150
Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 13

rack travel mm : 4.00
Rated speed rpm : 1260
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : $>$ 9.00

Testing:

Rated speed rpm : 300
rack travel mm : 5.60
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 12.50
Tolerance mm : \pm 0.10

Rated speed rpm : 1100
rack travel mm : 13.70
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 13.70
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

2-stage LDA setting

Rated speed rpm : 400
Pressure hPa : 600

MEASUREMENT

Pressure hPa : 350
rack travel mm : -1.20
Tolerance mm : \pm 0.15

Pressure hPa : 200
rack travel mm : -2.20
Tolerance mm : \pm 0.20

Pressure hPa : 975
rack travel mm : 0.50
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 214.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000s. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 700

Del. quantity
cm³/1000 strokes : 216.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 205.0
Tolerance
cm³/1000 strokes : +- 15.0
Check tolerance
cm³/1000S. : +- 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.60
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.09.97
Test oil : ISO 4113

Combination No. : 0 402 646 743

Injection pump
Pump designation : PE6P120A320LS7837-2
EP type number : 0 412 626 943

Governor
Governor design. : RQ300/1100PA1271
Governor no. : 0 421 801 803

Cust. part No. : 0270743102

Customer-spec. information
Customer : MB-NFZ
Motor : OM441 LA
Power KW : 260.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 120
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 6

CRT ZERO POSITION

Rack travel in mm : 14.50

Tolerance mm : \pm 0.10

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 14.50
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 233.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1146
guide sleeve
travel mm : 6.50
Tolerance mm : \pm 0.15

Rated speed rpm : 300

guide sleeve
travel mm : 2.13
Tolerance mm : \pm 0.20

Rated speed rpm : 1100
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 425
guide sleeve
travel mm : 4.89
Tolerance mm : \pm 0.10

Rated speed rpm : 550
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1340
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 650

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 850

Del. quantity
cm³/1000 strokes : 233.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 100.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 14.60
Rated speed rpm : 1150
Tolerance 1/min : + 5
Check
speed 1/min : + 13

rack travel mm : 4.00
Rated speed rpm : 1265
Tolerance 1/min : + 15
Check
speed 1/min : + 20

rack travel mm : 0.75
Tolerance mm : + 0.75
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 9.00

Testing:

Rated speed rpm : 300
rack travel mm : 5.60
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : + 20

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 14.50
Tolerance mm : + 0.05

Rated speed rpm : 1100
rack travel mm : 15.60
Tolerance mm : + 0.10

Rated speed rpm : 700
rack travel mm : 15.60
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

2-stage LDA setting

Rated speed rpm : 400
Pressure hPa : 850

MEASUREMENT

Pressure hPa : 500
rack travel mm : -1.60
Tolerance mm : + 0.15

Pressure hPa : 200
rack travel mm : -4.00
Tolerance mm : + 0.20

Pressure hPa : 1240
rack travel mm : 0.45
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 252.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.5
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 700

Del. quantity
cm³/1000 strokes : 258.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0

Aneroid pressure
hPa : 500
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 141.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : +- 10.0
Check tolerance
cm³/1000S. : +- 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.60
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.09.97

Test oil : ISO 4113

Combination No. : 0 402 646 785C

Injection pump

Pump designation : PE6P120A320LS7869

EP type number : 0 412 626 387

Governor

Governor design. : RQV300...1050PA1078K

Governor no. : 0 421 815 359

Cust. part No. : 9882898

Customer-spec. information

Customer : LIEBHERR

Motor : D 9406 TI-E A3

Power KW : 295.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 165

Tolerance l/h : ± 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.65

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 6- 3- 5- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 283.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 4.20

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 10.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1117
guide sleeve
travel mm : 10.27
Tolerance mm : + 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 1.14
Tolerance mm : + 0.25

Rated speed rpm : 755
guide sleeve
travel mm : 6.17
Tolerance mm : + 0.25

Rated speed rpm : 382
guide sleeve
travel mm : 2.42
Tolerance mm : + 0.25

Rated speed rpm : 432
guide sleeve
travel mm : 3.22
Tolerance mm : + 0.25

Rated speed rpm : 470
guide sleeve
travel mm : 3.64
Tolerance mm : + 0.25

Rated speed rpm : 1330
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1191

Rack travel in mm : 68.25
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1400
Del. quantity
cm³/1000 strokes : 283.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 116.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 11.15
Rated speed rpm : 1060
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1160
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1200

Tolerance 1/min : + - 15

LOW IDLE

control lever
position degree : 75.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 300

CRT mm min. : > 8.00

Testing:

Rated speed rpm : 400
rack travel mm : 4.20
Tolerance mm : + - 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.15
Tolerance mm : + - 0.05

Rated speed rpm : 500
rack travel mm : 10.00
Tolerance mm : + - 0.10

Rated speed rpm : 800
rack travel mm : 11.90
Tolerance mm : + - 0.10

Rated speed rpm : 950
rack travel mm : 12.00
Tolerance mm : + - 0.10

Rated speed rpm : 600
rack travel mm : 10.45
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
Pressure hPa : 1400
rack travel mm : 12.15
Tolerance mm : + - 0.05

Rated speed rpm : 1000
Pressure hPa : -
rack travel mm : 9.30
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 1000

Pressure hPa : 850
rack travel mm : 11.45
Tolerance mm : + - 0.05

Pressure hPa : 650
rack travel mm : 10.05
Tolerance mm : + - 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1400
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 272.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0

Aneroid pressure
hPa : 1400
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 297.5
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 245.5
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100
rack travel mm : 9.80
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 4.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 10.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.09.97

Test oil : ISO 4113

Combination No. : 0 402 676 823

Injection pump

Pump designation : PE6P120A320LS7885-1

EP type number : 0 412 626 948

Governor

Governor design. : RSV400...1000P1A589

Governor no. : 0 421 833 449

Cust. part No. : 9881286

Customer spec. information

Customer : LIEBHERR

Motor : D 9406 TI-E A3

Power KW : 258.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 125

Tolerance l/h : ± 20.0

Test nozzle holder assembly

: 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.55

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 6- 3- 5- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.75

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 265.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1400

Del. quantity
cm³/1000 strokes : 265.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 106.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.50
Rated speed rpm : 935
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1008
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1200

rack travel mm : 4.00
Rated speed rpm : 1031
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 83.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 3.50
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 400
rack travel mm : 5.00
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 515
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 900

rack travel mm : 13.75
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 13.75
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 13.75
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1400
rack travel mm : 13.75
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.90
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 870
rack travel mm : 13.40
Tolerance mm : \pm 0.05

Pressure hPa : 740
rack travel mm : 12.50
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1400
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 272.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1400
Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 280.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,
rack must reach start position in max.
control lever setting.

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed

Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.09.97
Test oil : ISO 4113

Combination No. : 0 402 676 823C

Injection pump
Pump designation : PE6P12GA320LS7885-1
EP type number : 0 412 626 948

Governor
Governor design. : RSV400...1000P1A589
Governor no. : 0 421 833 449

Cust. part No. : 9881286

Customer-spec. information
Customer : LIEBHERR
Motor : D 9406 TI-E A3
Power KW : 258.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance L/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 6- 3- 5- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 265.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 5.00

Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure
hPa : 1400

Del. quantity
cm³/1000 strokes : 265.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 106.0

RATED SPEED

rack travel mm : 12.75

Rated speed rpm : 935

Tolerance 1/min : +- 5

rack travel mm : 0.85

Tolerance mm : +- 0.55

Rated speed rpm : 1200

rack travel mm : 4.00

Rated speed rpm : 1030

Tolerance 1/min : +- 15

LOW IDLE

control lever
position degree : 83.0

Setting point w/out bumper spring

Rated speed rpm : 400

rack travel mm : 3.50

Tolerance mm : +- 0.10

Testing:

Rated speed rpm : 400

rack travel mm : 5.00

Tolerance mm : +- 0.10

TORQUE CONTROL

Rated speed rpm : 900

rack travel mm : 13.75

Tolerance mm : +- 0.05

Rated speed rpm : 500

rack travel mm : 13.75

Tolerance mm : +- 0.10

Rated speed rpm : 700

rack travel mm : 13.75

Tolerance mm : +- 0.30

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1400
rack travel mm : 13.75
Tolerance mm : ± 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.90
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 870
rack travel mm : 13.40
Tolerance mm : ± 0.05

Pressure hPa : 740
rack travel mm : 12.50
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1400
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 280.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : 1400
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 272.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 5.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.09.97

Test oil : ISO 4113

Combination No. : 0 402 678 826

Injection pump

Pump designation : PE8P120A320LS7878-1

EP type number : 0 412 628 906

Governor

Governor design. : RSV400...1000P1A589

Governor no. : 0 421 833 449

Cust. part No. : 9279387

Customer-spec. information

Customer : LIEBHERR

Motor : D 9408 TI-E

Power KW : 317.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 105

Tolerance l/h : ± 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.55

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 8- 7- 2- 6

: - 3- 5- 4

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.00

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 251.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : +- 4.0

Spreed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 4.65

Tolerance mm : +- 0.20

Del. quantity
cm3/1000 strokes : 26.0

Tolerance
cm3/1000 strokes : +- 3.0

Check tolerance
cm3/1000S. : +- 6.0

Spreed

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 251.0
Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 4.0

Spreed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 94.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 12.00
Rated speed rpm : 940
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 990
Tolerance 1/min : +- 15

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1160

rack travel mm : 4.00
Rated speed rpm : 995
Tolerance 1/min : +- 15

LOW IDLE

control lever
position degree : 70.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 3.65
Tolerance mm : +- 0.10

Testing:

Rated speed rpm : 400
rack travel mm : 4.65
Tolerance mm : +- 0.20

rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : +- 30

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 13.00
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 13.00
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 13.00
Tolerance mm : \pm 0.05

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.00
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.30
Tolerance mm : \pm 0.15

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 800
rack travel mm : 12.50
Tolerance mm : \pm 0.05

Pressure hPa : 700
rack travel mm : 11.60
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 263.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure

hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 252.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 213.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 4.65
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spread

Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.09.97

Test oil : ISO 4113

Combination No. : 0 402 678 826E

Injection pump

Pump designation : PE8P120A320LS7878-1

EP type number : 0 412 628 906

Governor

Governer design. : R3V400...1000P1A589

Governer no. : 0 421 833 449

Cust. part No. : 9279387

Customer-spec. information

Customer : LIEBHERR

Motor : D 9408 TI-E

Power KW : 317.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 105

Tolerance l/h : ± 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.55

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 8- 7- 2- 6

: - 3- 5- 4

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.00

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 251.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : +- 4.0

Spread

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 4.65

Tolerance mm : +- 0.20

Del. quantity
cm3/1000 strokes : 26.0

Tolerance
cm3/1000 strokes : +- 3.0

Check tolerance
cm3/1000S. : +- 6.0

Spread

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure
hPa : 1200

Del. quantity
cm3/1000 strokes : 251.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 4.0

Spread

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 94.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 12.00

Rated speed rpm : 940

Tolerance 1/min : +- 5

rack travel mm : 4.00

Rated speed rpm : 990

Tolerance 1/min : +- 15

rack travel mm : 0.85

Tolerance mm : +- 0.55

Rated speed rpm : 1160

rack travel mm : 4.00

Rated speed rpm : 995

Tolerance 1/min : +- 15

LOW IDLE

control lever
position degree : 70.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 400

rack travel mm : 3.65

Tolerance mm : +- 0.10

Testing:

Rated speed rpm : 400

rack travel mm : 4.65

Tolerance mm : +- 0.20

rack travel mm : 2.00

Rated speed rpm : 500

Tolerance 1/min : +- 30

TORQUE CONTROL

Rated speed rpm : 900

rack travel mm : 13.00

Tolerance mm : +- 0.05

Rated speed rpm : 500
rack travel mm : 13.00
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 13.00
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.00
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.30
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 800
rack travel mm : 12.50
Tolerance mm : \pm 0.05

Pressure hPa : 700
rack travel mm : 11.60
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 263.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 252.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 213.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 4.65
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.09.97
Test oil : ISO 4113

Combination No. : 0 402 746 632

Injection pump
Pump designation : PES6P120A720RS7366
EP type number : 0 412 726 933

Governor
Governor design. : RQ300/1050PA1340
Governor no. : 0 421 801 820

Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8460.41S.7031
Power kW : 254.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Check
tolerance °NW : ± 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.95

Tolerance mm	: ± 0.05
<hr/>	
Del. quantity cm ³ /1000 strokes	: 289.0
<hr/>	
Tolerance cm ³ /1000 strokes	: ± 1.0
<hr/>	
Check tolerance cm ³ /1000S.	: ± 4.0
<hr/>	
Spread	
<hr/>	
Tolerance cm ³ /1000 strokes	: 5.0
<hr/>	
Check tolerance cm ³ /1000S.	: 9.0
<hr/>	
Rated speed rpm	: 300
Rack travel in mm	: 6.00
Tolerance mm	: ± 0.10
Del. quantity cm ³ /1000 strokes	: 23.0
Tolerance cm ³ /1000 strokes	: ± 3.0
Check tolerance cm ³ /1000S.	: ± 6.0
Spread	
Tolerance cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1110
guide sleeve travel mm	: 6.85
Tolerance mm	: ± 0.15
Rated speed rpm	: 300
guide sleeve travel mm	: 1.97
Tolerance mm	: ± 0.20
Rated speed rpm	: 1050
guide sleeve travel mm	: 6.50
Tolerance mm	: ± 0.10
Rated speed rpm	: 697

guide sleeve travel mm	: 6.13
Tolerance mm	: ± 0.10
Rated speed rpm	: 399
guide sleeve travel mm	: 4.74
Tolerance mm	: ± 0.10
Rated speed rpm	: 480
guide sleeve travel mm	: 6.00
Tolerance mm	: ± 0.10
Rated speed rpm	: 1270
guide sleeve travel mm	: 11.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 877
guide sleeve travel mm	: 6.38
Tolerance mm	: ± 0.10

GUIDE SLEEVE POSITION

control lever position degree	: 109
Rated speed rpm	: 500
Rack travel in mm	: 20.00
Tolerance mm	: ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1050
Aneroid pressure hPa	: 1200
Del. quantity cm ³ /1000 strokes	: 289.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spread	
Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0

RATED SPEED	
rack travel mm	: 11.90
Rated speed rpm	: 1103
Tolerance 1/min	: ± 8
Check speed 1/min	: ± 13

rack travel mm : 4.00
Rated speed rpm : 1190
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : $>$ 8.15

Testing:

Rated speed rpm : 300
rack travel mm : 6.00
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.95
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 14.10
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 13.90
Tolerance mm : \pm 0.10

Rated speed rpm : 875
rack travel mm : 13.25
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 14.10
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.20
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 250
rack travel mm : 10.45
Tolerance mm : \pm 0.20

Pressure hPa : 500
rack travel mm : 12.60
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 200
Rated speed rpm : $<$ 240

Check
speed 1/min : $>$ 180
Check
speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 322.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 151.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.65
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000s. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.09.97
Test oil : ISO 4113

Combination No. : 0 403 466 175

Injection pump
Pump designation : PES6MW100/120RS1240
EP type number : 0 413 406 239

Governor
Governor design. : RSV400...950MW2A395
Governor no. : 0 420 085 283

Cust. part No. : 3930113

Customer-spec. information
Customer : CDC
Motor : 6 CT-830
Power KW : 160.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.35
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 8.00

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 154.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 5.80
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 20.7

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 154.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 93.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.15
Rated speed rpm : 990
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1040
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1200

rack travel mm : 4.00
Rated speed rpm : 1055
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 68.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.30
Tolerance mm : + 0.10

Testing:

Rated speed rpm : 400
rack travel mm : 5.80
Tolerance mm : + 0.30

rack travel mm : 2.00
Rated speed rpm : 480
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 13.15
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.15
Tolerance mm : \pm 0.10

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.15
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.00
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 750
rack travel mm : 11.90
Tolerance mm : \pm 0.15

Pressure hPa : 600
rack travel mm : 11.30
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 157.2
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 119.1
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Check hydraulic start locking and
unlocking device with 500...1000 hPa.

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 5.80
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 20.7
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.09.97
Test oil : ISO 4113
Combination No. : 0 400 846 442
Injection pump
Pump designation : PES6A90D410RS2502
EP type number : 0 410 896 059
Governor
Governor design. : RQV250...1300AB1071D
: L
Governor no. : 0 420 214 250
Cust. part No. :

Customer-spec. information
Customer : IVECO-OM
Motor : 8360.05.300

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 003
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 12.35
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 84.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.5
Spreed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 4.5

Rated speed rpm : 250

Rack travel in mm : 10.00

Tolerance mm : ± 0.10

Del. quantity

cm³/1000 strokes : 31.0

Tolerance

cm³/1000 strokes : ± 2.0

Check tolerance

cm³/1000S. : ± 4.0

Spread

Tolerance

cm³/1000 strokes : 2.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1100

guide sleeve

travel mm : 6.70

Tolerance mm : ± 0.10

Rated speed rpm : 100

guide sleeve

travel mm : 0.50

Tolerance mm : ± 0.20

Rated speed rpm : 400

guide sleeve

travel mm : 2.85

Tolerance mm : ± 0.15

Rated speed rpm : 800

guide sleeve

travel mm : 5.05

Tolerance mm : ± 0.15

Rated speed rpm : 1350

guide sleeve

travel mm : 8.75

Tolerance mm : ± 0.05

GUIDE SLEEVE POSITION

Rated speed rpm : 1325

Rack travel in mm : 16.40

L05

Tolerance mm : ± 1.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure

hPa : -

Del. quantity

cm³/1000 strokes : 84.5

Tolerance

cm³/1000 strokes : ± 0.5

Check tolerance

cm³/1000S. : ± 2.5

Spread

Tolerance

cm³/1000 strokes : 3.0

Check tolerance

cm³/1000S. : 4.5

CONTROL LEVER

control lever

position degree : 117.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.30

Rated speed rpm : 1345

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1480

Tolerance 1/min : ± 15

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1600

LOW IDLE

control lever

position degree : 76.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 11.50

Testing:

Rated speed rpm : 250

rack travel mm : 10.00
Tolerance mm : \pm 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 12.55
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 12.50
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 75.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

Aneroid pressure

hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 83.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 16.30
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 118.0
Tolerance
cm³/1000 strokes : \pm 6.0
Check tolerance
cm³/1000S. : \pm 9.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 10.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 31.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 2.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.09.97
Test oil : ISO 4113
Combination No. : 0 400 864 106
Injection pump
Pump designation : PES4A95D410/3RS2789
EP type number : 0 410 894 995
Governor
Governor design. : RSV325...1250A5C879L
Governor no. : 0 420 232 634
Cust. part No. : 0423 2071 KY

Customer-spec. information
Customer : KHD-DMI
Motor : BF4L 913
Power KW : 78.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250
Rack travel in mm : 13.50
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 87.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000s. : 8.0

Rated speed rpm : 325

Rack travel in mm : 9.60

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 14.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000s. : ± 4.5

Spread
Tolerance

cm³/1000 strokes : 5.5

Check tolerance
cm³/1000s. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure

hPa : -

Del. quantity
cm³/1000 strokes : 87.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 3.0

Spread
Tolerance

cm³/1000 strokes : 3.5

Check tolerance
cm³/1000s. : 8.0

CONTROL LEVER

control lever
position degree : 102.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 12.50
Rated speed rpm : 1295
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1355
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1565

rack travel mm : 4.00
Rated speed rpm : 1415
Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 69.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 9.10
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325
rack travel mm : 9.60
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 605
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.50
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 14.20
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1400
rack travel mm : 14.20
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.30
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 300
rack travel mm : 13.70
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 68.0

Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 9.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.09.97

Test oil : ISO 4113

Combination No. : 0 400 866 143

Injection pump

Pump designation : PES6A95D120RS2773

EP type number : 0 410 896 904

Governor

Governer design. : RSV350...1250A0C2237

: R

Governer no. : 0 420 233 240

Cust. part No. :

Customer-spec. information

Customer : CUMMINS

Motor : 5BT

Power KW : 118.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder assembly

: 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

L10

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 2.15

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 9.45

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 89.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000s. : ± 3.5

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 350

Rack travel in mm : 6.00

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spreed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 89.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.5

Spreed

Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 93.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 8.40

Rated speed rpm : 1295

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1370

Tolerance 1/min : ± 15

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1530

rack travel mm : 4.00

Rated speed rpm : 1385

Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 74.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350

rack travel mm : 5.50

Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 350

rack travel mm : 6.00

Tolerance mm : ± 0.10

rack travel mm : 2.00

Rated speed rpm : 520

Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 9.45
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 9.50
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

kPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 73.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.50
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 6.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 29.04.97

Test oil : ISO 4113

Combination No. : 0 400 866 163

Injection pump

Pump designation : PES6A90D320/3RS2660

EP type number : 0 410 896 078

Governor

Governer design. : RSV325...1175A0C2247
: R

Governer no. : 0 420 233 264

Cust. part No. :

Customer-spec. information

Customer : MWM

Motor : Tb226B-6

Power KW : 107.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Test nozzle holde assembly

: 0 681 343 009

Opening pressure bar

: 173.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.00

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Beginning of delivery differende

and maximum rack

travel : 9.00

Tolerance mm : ± 0.50

Difference ° CS : 4.00

BASIC SETTING

Rated speed rpm : 1175

Rack travel in mm : 10.45

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 77.5

Tolerance
cm3/1000 strokes : + 0.5

Check tolerance
cm3/1000S. : + 2.5

Spread

Tolerance
cm3/1000 strokes : 3.0

Check tolerance
cm3/1000S. : 5.0

Rated speed rpm : 325

Rack travel in mm : 7.30
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 13.0

Tolerance
cm3/1000 strokes : + 3.0

Check tolerance
cm3/1000S. : + 5.0

Spread

Tolerance
cm3/1000 strokes : 2.5

Check tolerance
cm3/1000S. : 4.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1175
Aneroid pressure
hPa : 700
Del. quantity
cm3/1000 strokes : 77.5

Tolerance
cm3/1000 strokes : + 0.5

Check tolerance
cm3/1000S. : + 2.5

Spread

Tolerance
cm3/1000 strokes : 3.0

Check tolerance
cm3/1000S. : 5.0

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.30
Rated speed rpm : 1220
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1255
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1430

rack travel mm : 4.00
Rated speed rpm : 1280
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 68.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 6.80
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325
rack travel mm : 7.30
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 530
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1175
rack travel mm : 10.45
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 11.45
Tolerance mm : + 0.05

Rated speed rpm : 965
rack travel mm : 10.90
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.45
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.45
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 210
rack travel mm : 10.70
Tolerance mm : + 0.10

Pressure hPa : 275
rack travel mm : 11.05
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 83.5
Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.5

Aneroid pressure

hPa : 700
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 78.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.5

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 62.0
Tolerance
cm³/1000 strokes : + 0.5
Check tolerance
cm³/1000S. : + 2.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + 0.75
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000S. : + 8.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 7.30
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 5.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 03.06.96

Test oil : ISO 4113

Combination No. : 0 400 366 183

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number : 9 410 230 025

Governor

Governer design. : RSV425...750A4C2213

: -5R

Governer no. : 0 420 233 326

Cust. part No. :

Customer-spec. information

Customer : CDC

Motor : 6 CT 8.3 L

Power KW : 135.0

TEST BENCH REQUIREMENTS

Inlet line : 2.0

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

L1?

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 28.0

Tolerance bar : ± 1.0

Prestroke mm : 2.85

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

°NW after s.o.d. : 10.00

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 14.05
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 145.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.5

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 425

Rack travel in mm : 6.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750

Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 145.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 90.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 13.00
Rated speed rpm : 800
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 840
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 950

rack travel mm : 4.00
Rated speed rpm : 845
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 80.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 425
rack travel mm : 5.60
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 425
rack travel mm : 6.10
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 14.05
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 147.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 425
Rack travel in mm : 6.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.10.97
Test oil : ISO 4113
Combination No. : 0 400 866 194
Injection pump
Pump designation : PES6A100D320/3RS2763
EP type number : 0 410 806 006
Governor
Governor design. : RSV415...1175A0C2190
: -69R
Governor no. : 0 420 233 308
Cust. part No. : 3921135

Customer-spec. information
Customer : CDC
Motor : 6 CT 8.3
Power KW : 129.0

TEST BENCH REQUIREMENTS

Inlet line : 2.
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

L20

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 28.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1175
Rack travel in mm : 9.45
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 99.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.5
Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 415

Rack travel in mm : 5.20

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 16.5

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1175
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 99.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.5

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 90.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.45

Rated speed rpm : 1245

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1310

Tolerance 1/min : ± 15

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1350

rack travel mm : 4.00

Rated speed rpm : 1315

Tolerance 1/min : ± 15

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 415

rack travel mm : 4.70

Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 415

rack travel mm : 5.20

Tolerance mm : ± 0.10

rack travel mm : 2.00

Rated speed rpm : 490

Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1175

rack travel mm : 9.45

Tolerance mm : ± 0.05

Rated speed rpm : 800

rack travel mm : 10.80

Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 103.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : ± 0.75
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 13.0

LOW IDLE

Rated speed rpm : 415

Rack travel in mm : 5.20
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 16.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.10.97

Test oil : ISO 4113

Combination No. : 0 400 866 197

Injection pump

Pump designation : PES6A100D320/3RS2691

: -4

EP type number : 9 410 230 030

Governor

Governor design. : RSV450...1100A0C2238

: -3R

Governor no. : 0 420 233 330

Cust. part No. :

Customer-spec. information

Customer : CDC

Motor : 6 CT 830

Power KW : 151.0

TEST BENCH REQUIREMENTS

Inlet line : 2.

Test oil inlet

temp. °C : 40

Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder assembly

: 1 688 901 101

Opening pressure bar

: 208.5

Tolerance bar : +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 28.0

Tolerance bar : +- 1.0

Prestroke mm : 2.85

Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

°NW after s.o.d. : 11.00

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.15
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 120.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.5

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 450

Rack travel in mm : 5.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 120.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.5

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 96.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 4.00
Rated speed rpm : 1210
Tolerance 1/min : \pm 15

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1143
rack travel mm : 11.15

Rated speed rpm : 1200
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1360

Rated speed rpm : 1144
rack travel mm : 11.15

Rated speed rpm : 1201
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1145
rack travel mm : 11.15

Rated speed rpm : 1202
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1146
rack travel mm : 11.15

Rated speed rpm : 1203
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1147
rack travel mm : 11.15

Rated speed rpm : 1204
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1148
rack travel mm : 11.15

Rated speed rpm : 1205
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 5.20
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 19.50

Testing:

L25

Rated speed rpm : 450
rack travel mm : 5.70
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 515
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.15
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.10
Tolerance mm : \pm 0.10

Rated speed rpm : 1100
rack travel mm : 11.15
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 13.10
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.45
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 560
rack travel mm : 12.35
Tolerance mm : \pm 0.20

Pressure hPa : 385
rack travel mm : 11.45
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 750

Del. quantity
cm³/1000 strokes : 137.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 82.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 146.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 13.0

LOW IDLE

Rated speed rpm : 450

Rack travel in mm : 5.70
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.06.97
Test oil : ISO 4113
Combination No. : 0 400 866 198
Injection pump
Pump designation : PES6A100D320/3RS2763
EP type number : 0 410 806 006
Governor
Governor design. : RSV400...950A0C2238
: -4R
Governor no. : 0 420 233 331
Cust. part No. :

Customer-spec. information
Customer : CDC
Motor : 6 CT 8.3
Power KW : 145.0

TEST BENCH REQUIREMENTS

Inlet line : 2.
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 950
Rack travel in mm : 12.15
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 121.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.5
Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 400

Rack travel in mm : 5.20

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 15.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 121.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.5

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 96.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 11.10
Rated speed rpm : 995
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1070
Tolerance 1/min : ± 5

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1200

rack travel mm : 4.00
Rated speed rpm : 1085
Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 79.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 4.70
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.20
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 470
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 12.15
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.15
Tolerance mm : ± 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.80
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 305
rack travel mm : 11.70
Tolerance mm : ± 0.20

Pressure hPa : 220
rack travel mm : 11.20
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 76.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : ± 0.75
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : ± 10.0

Check tolerance
cm³/1000S. : ± 13.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 5.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 15.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 01.10.97

Test oil : ISO 4113

Combination No. : 0 400 866 208

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number : 9 410 230 025

Governor

Governer design. : RSV400...1100A0C2190

: -80R

Governer no. : 0 420 233 319

Cust. part No. :

Customer-spec. information

Customer : CDC

Motor : 6 CT 8.3

Power KW : 156.6

TEST BENCH REQUIREMENTS

Inlet line : 2.

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde
assembly

: 1 688 901 101

Opening pressure
bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 28.0

Tolerance bar : ± 1.0

Prestroke mm : 2.85

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

°NW after s.o.d. : 10.00

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.35

Tolerance mm	: +- 0.05
<hr/>	
Del. quantity cm ³ /1000 strokes	: 124.5
<hr/>	
Tolerance cm ³ /1000 strokes	: +- 1.0
<hr/>	
Check tolerance cm ³ /1000S.	: +- 3.5
<hr/>	
Spreed	
<hr/>	
Tolerance cm ³ /1000 strokes	: 4.0
<hr/>	
Check tolerance cm ³ /1000S.	: 6.5
<hr/>	

Rated speed rpm	: 400
<hr/>	
Rack travel in mm	: 5.40
Tolerance mm	: +- 0.10
Del. quantity cm ³ /1000 strokes	: 18.0
Tolerance cm ³ /1000 strokes	: +- 2.0
Check tolerance cm ³ /1000S.	: +- 4.5
<hr/>	
Spreed	
<hr/>	
Tolerance cm ³ /1000 strokes	: 6.0
Check tolerance cm ³ /1000S.	: 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
<hr/>	
Rack travel in mm	: 0.50
Tolerance mm	: +- 0.20
<hr/>	
governor spring pre-tension click setting x	: 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1100
Aneroid pressure hPa	: -
Del. quantity cm ³ /1000 strokes	: 124.5
Tolerance cm ³ /1000 strokes	: +- 1.0
Check tolerance cm ³ /1000S.	: +- 3.5
Spreed	
<hr/>	
Tolerance cm ³ /1000 strokes	: 4.0
Check tolerance cm ³ /1000S.	: 6.5

CONTROL LEVER

control lever position degree	: 96.0
tolerance degree	: +- 4.0

RATED SPEED

rack travel mm	: 11.30
Rated speed rpm	: 1145
Tolerance 1/min	: +- 5

rack travel mm	: 4.00
Rated speed rpm	: 1200
Tolerance 1/min	: +- 15

rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1365

rack travel mm	: 4.00
Rated speed rpm	: 1210
Tolerance 1/min	: +- 15

LOW IDLE

control lever position degree	: 74.0
tolerance degree	: +- 4.0

Setting point w/out bumper spring

Rated speed rpm	: 400
rack travel mm	: 4.90
Tolerance mm	: +- 0.10

Rated speed rpm	: 100
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CRT mm min.	: > 19.50
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Testing:

Rated speed rpm : 400
rack travel mm : 5.40
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 460
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.35
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 146.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000s. : \pm 13.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 5.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.09.97
Test oil : ISO 4113

Combination No. : 0 400 866 219

Injection pump
Pump designation : PES6A95D120RS2860
EP type number : 0 410 896 889

Governor
Governor design. : RSV425...1050A002260
: -3R
Governor no. : 0 420 233 344

Cust. part No. : 32 82 684

Customer-spec. information
Customer : CUMMINS
Motor : 6 BT
Power kW : 113.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quantity
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.15
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 11.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 10.90

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 97.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 425

Rack travel in mm : 6.95
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 16.8

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed

Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 1.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure
hPa : 1100

Del. quantity
cm³/1000 strokes : 97.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 90.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 9.90
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1140
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1330

rack travel mm : 4.00
Rated speed rpm : 1175
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 425
rack travel mm : 5.95
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 425
rack travel mm : 6.95
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 590
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 10.90
Tolerance mm : \pm 0.05

Rated speed rpm : 450
rack travel mm : 11.80
Tolerance mm : \pm 0.10

Rated speed rpm : 550
rack travel mm : 11.50
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 450
Pressure hPa : 1100
rack travel mm : 11.80
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.80
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 450
Pressure hPa : 420
rack travel mm : 10.10
Tolerance mm : \pm 0.10

Pressure hPa : 730
rack travel mm : 10.95
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1100

M07

Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 98.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.00
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 115.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 425
Rack travel in mm : 6.95
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 16.8
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.10.97

Test oil : ISO 4113

Combination No. : 0 400 866 228

Injection pump

Pump designation : PES6A95D410/3RS2909

EP type number : 0 410 896 883

Governor

Governer design. : RSV325...1250A5C872L

Governer no. : 0 420 232 627

Cust. part No. : 0423 2042 KY

Customer-spec. information

Customer : KHD-DMI

Motor : BF6L 913C

Power KW : 141.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde assembly

: 0 681 343 009

Opening pressure bar

: 173.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 2.60

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.80

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 105.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000s. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 4.80
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 11.5

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spread
Tolerance

cm³/1000 strokes : 5.5
Check tolerance

cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 105.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread
Tolerance

cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 106.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.80
Rated speed rpm : 1295
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1355
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1515

rack travel mm : 4.00
Rated speed rpm : 1365
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 71.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.30
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325
rack travel mm : 4.80
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 455
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 11.80
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.85
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1450
rack travel mm : 11.80
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.00
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 470
rack travel mm : 11.30
Tolerance mm : \pm 0.05

Pressure hPa : 320
rack travel mm : 10.70
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 104.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : \pm 2.0

M10

Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.70
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 4.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 11.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 01.10.97

Test oil : ISO 4113

Combination No. : 0 400 866 229

Injection pump

Pump designation : PES6A95D410/3RS2907

EP type number : 0 410 896 884

Governor

Governer design. : RSV325...1250A5C873L

Governer no. : 0 420 232 628

Cust. part No. : 0423 2077 KY

Customer-spec. information

Customer : KHD-DMI

Motor : BF6L 913

Power KW : 118.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder assembly

: 0 681 343 009

Opening pressure

bar : 173.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.00

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.00

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 82.5

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 9.60

Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 14.5

Tolerance
cm³/1000 strokes : +- 2.0

Check tolerance
cm³/1000S. : +- 4.5

Spread
Tolerance

cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 82.5

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 103.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 12.00
Rated speed rpm : 1295
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1355
Tolerance 1/min : +- 15

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1565

rack travel mm : 4.00
Rated speed rpm : 1415
Tolerance 1/min : +- 15

LOW IDLE

control lever
position degree : 70.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 9.10
Tolerance mm : +- 0.10

Testing:

Rated speed rpm : 325
rack travel mm : 9.60
Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 610
Tolerance 1/min : +- 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.00

Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 14.10
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 14.10
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.30
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 250
rack travel mm : 13.80
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 69.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 9.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 14.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spread
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.10.97
Test oil : ISO 4113
Combination No. : 0 400 866 231
Injection pump
Pump designation : PES6A95D410/3RS2907
EP type number : 0 410 896 884

Governor
Governor design. : RSV325...900A1C875L
Governor no. : 0 420 232 630

Cust. part No. : 0423 2058 KY

Customer-spec. information
Customer : KHD-DMI
Motor : BF6L 913/C
Power KW : 112.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 850
Rack travel in mm : 13.80
Del. quantity
cm³/1000 strokes : 97.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 8.20

Del. quantity
cm³/1000 strokes : 11.5

Tolerance
cm³/1000 strokes : +- 2.0

Check tolerance
cm³/1000S. : +- 4.5

Speed
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 2.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 97.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 89.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 12.80

Rated speed rpm : 895

Tolerance 1/min : +- 5

rack travel mm : 4.00

Rated speed rpm : 920

Tolerance 1/min : +- 10

rack travel mm : 0.85

Tolerance mm : +- 0.55

Rated speed rpm : 1095

rack travel mm : 4.00

Rated speed rpm : 945

LOW IDLE

control lever
position degree : 67.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325

rack travel mm : 7.70

Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325

rack travel mm : 8.20

rack travel mm : 2.00

Rated speed rpm : 415

Tolerance 1/min : +- 30

TORQUE CONTROL

Rated speed rpm : 850

rack travel mm : 13.80

Rated speed rpm : 500

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000s. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 8.20
Del. quantity
cm³/1000 strokes : 11.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000s. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 01.10.97

Test oil : ISO 4113

Combination No. : 0 400 874 238

Injection pump

Pump designation : PES4A95D410RS2685

EP type number : 0 410 894 996

Governor

Governer design. : RSV400...1000A1C2187

: L

Governer no. : 0 420 232 387

Cust. part No. :

Customer-spec. information

Customer : LIEBHERR

Motor : D904 NA

Power KW : 90.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde assembly

: 0 681 343 009

Opening pressure bar

: 173.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 2.85

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Beginning of delivery differende

and maximum rack

travel : 9.00

Tolerance mm : ± 0.50

Difference ° CS : 4.50

BASIC SETTING

Rated speed rpm : 975

Rack travel in mm : 12.25

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 120.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 415

Rack travel in mm : 6.20

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever

position degree : - 3

Rated speed rpm : 800

Rack travel in mm : 0.50

Tolerance mm : + 0.20

governor spring

pre-tension

click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 975

Aneroid pressure

hPa : -

Del. quantity
cm³/1000 strokes : 120.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever

position degree : 94.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.20

Rated speed rpm : 1025

Tolerance 1/min : + 5

rack travel mm : 4.00

Rated speed rpm : 1050

Tolerance 1/min : + 15

rack travel mm : 0.85

Tolerance mm : + 0.55

Rated speed rpm : 1230

rack travel mm : 4.00

Rated speed rpm : 1085

Tolerance 1/min : + 10

LOW IDLE

control lever

position degree : 69.0

tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 415

rack travel mm : 6.70

Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 415

rack travel mm : 6.20

Tolerance mm : + 0.10

rack travel mm : 2.00

Rated speed rpm : 565
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 975
rack travel mm : 12.25
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 12.30
Tolerance mm : \pm 0.10

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 415
Rack travel in mm : 6.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 01.10.97

Test oil : ISO 4113

Combination No. : 0 400 374 254

Injection pump

Pump designation : PES4A95D320RS2847

EP type number : 0 410 894 990

Governor

Governer design. : RSV375...1200A5C2268

: R

Governer no. : 0 420 233 337

Cust. part No. :

Customer-spec. information

Customer : VALMET

Motor : 420 DS

Power KW : 84.0

TEST BENCH REQUIREMENTS

Inlet line : 2.3

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde assembly

: 0 681 343 009

Opening pressure bar

: 173.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

M20

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 2.55

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 2- 4- 3

Phasing : 0-90-180-270

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Beginning of delivery differende

and maximum rack

travel : 9.00

Tolerance mm : ± 0.50

Difference ° CS : 5.00

BASIC SETTING

Del. quantity

cm³/1000 strokes : 100.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 375

Rack travel in mm : 5.20
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 5.5

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 700

Del. quantity
cm³/1000 strokes : 100.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 104.0
tolerance degree : +- 4.0

RATED SPEED
rack travel mm : 11.50
Rated speed rpm : 1245
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1325
Tolerance 1/min : +- 15

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1425

rack travel mm : 4.00
Rated speed rpm : 1330
Tolerance 1/min : +- 15

LOW IDLE

control lever
position degree : 73.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 375
rack travel mm : 4.70
Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 375
rack travel mm : 5.20
Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 475
Tolerance 1/min : +- 30

TORQUE CONTROL

Rated speed rpm : 500
rack travel mm : 13.20
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 13.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 13.20
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.00
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 350
rack travel mm : 12.40
Tolerance mm : \pm 0.15

Pressure hPa : 440
rack travel mm : 12.90
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 91.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 79.0

Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Del. quantity
cm³/1000 strokes : 205.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 375

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.10.97
Test oil : ISO 4113
Combination No. : 0 400 874 257
Injection pump
Pump designation : PES4A95D32ORS2807
EP type number : 0 410 894 994
Governor
Governor design. : RSV375...1125A2C898R
Governor no. : 0 420 233 351

Cust. part No. : 8367 54718

Customer-spec. information
Customer : SISU
Motor : 420 DS
Power KW : 75.0

TEST BENCH REQUIREMENTS

Inlet line : 2.3

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 4- 3

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Beginning of delivery difference

and maximum rack
travel : 9.00
Tolerance mm : ± 0.50
Difference ° CS : 5.00

BASIC SETTING

Rated speed rpm : 1125

Rack travel in mm : 11.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 87.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 375

Rack travel in mm : 5.60

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 21.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Speed

Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1125
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 87.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 101.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.20
Rated speed rpm : 1170
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1250
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1410

rack travel mm : 4.00
Rated speed rpm : 1260
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 75.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 375
rack travel mm : 5.10
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 375
rack travel mm : 5.60
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 495
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1125
rack travel mm : 11.25
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 11.60
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.55
Tolerance mm : \pm 0.05

Rated speed rpm : 965
rack travel mm : 11.35
Tolerance mm : \pm 0.10

Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 87.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Rated speed rpm : 375
Rack travel in mm : 5.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : \pm 2.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.10.97

Test oil : ISO 4113

Combination No. : 0 400 876 321

Injection pump

Pump designation : PES6A95D32ORS2684

EP type number : 0 410 896 917

Governor

Governer design. : RSV325...1050A0C2178

: -2R

Governer no. : 0 420 233 178

Cust. part No. :

Customer-spec. information

Customer : VALMET

Motor : 611D

Power KW : 79.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : +- 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.0

Test nozzle holde assembly

: 0 681 343 009

Opening pressure

bar : 173.5

Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : +- 1.0

Prestroke mm : 2.55

Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Beginning of delivery differende

Difference ° CS : 5.00

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 7.95

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 66.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 3.0

Spreed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 325

Rack travel in mm : 4.15

Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 15.0

Tolerance
cm³/1000 strokes : +- 2.0

Check tolerance
cm³/1000S. : +- 4.5

Spreed
Tolerance

cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 66.0
Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 3.0

Spreed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 44.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 6.90
Rated speed rpm : 1095
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1145
Tolerance 1/min : +- 15

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1295

rack travel mm : 4.00
Rated speed rpm : 1150
Tolerance 1/min : +- 15

LOW IDLE

control lever
position degree : 26.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.70
Tolerance mm : +- 0.10

Testing:

Rated speed rpm : 325
rack travel mm : 4.15
Tolerance mm : +- 0.05

rack travel mm : 2.00
Rated speed rpm : 450
Tolerance 1/min : +- 30

TORQUE CONTROL

Dimension a mm : 0.70
Rated speed rpm : 1050
rack travel mm : 7.95
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 8.65
Tolerance mm : \pm 0.05

Rated speed rpm : 840
rack travel mm : 8.30
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 58.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000s. : \pm 4.0

Aneroid pressure
hPa : -

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 4.15
Tolerance mm : \pm 0.05
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5

Speed

Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000s. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.10.97
Test oil : ISO 4113

Combination No. : 0 400 876 384

Injection pump
Pump designation : PES6A95D32ORS2806
EP type number : 0 410 896 898

Governor
Governor design. : RSV375...1125A0C2178
: -8R
Governor no. : 0 420 233 280

Cust. part No. :

Customer-spec. information
Customer : VALMET
Motor : 620D
Power kW : 88.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

× inside diameter : 2.0
× length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Beginning of delivery differende

Difference ° CS : 5.00

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 9.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 74.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : +- 3.0

Spread

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

Rated speed rpm : 375

Rack travel in mm : 4.40

Tolerance mm : +- 0.10

Del. quantity
cm3/1000 strokes : 14.0

Tolerance
cm3/1000 strokes : +- 2.0

Check tolerance
cm3/1000S. : +- 4.5

Spread

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever

position degree : - 3

Rated speed rpm : 800

Rack travel in mm : 0.50

Tolerance mm : +- 0.20

governor spring

pre-tension

click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure

hPa : -

Del. quantity
cm3/1000 strokes : 74.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 3.0

Spread

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

CONTROL LEVER

control lever

position degree : 89.0

tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 8.00

Rated speed rpm : 1145

Tolerance 1/min : +- 5

rack travel mm : 4.00

Rated speed rpm : 1195

Tolerance 1/min : +- 15

rack travel mm : 0.85

Tolerance mm : +- 0.55

Rated speed rpm : 1350

rack travel mm : 4.00

Rated speed rpm : 1200

Tolerance 1/min : +- 15

LOW IDLE

control lever

position degree : 71.0

tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 375

rack travel mm : 4.00

Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 375

rack travel mm : 4.40

Tolerance mm : +- 0.10

rack travel mm : 2.00

Rated speed rpm : 455
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 9.05
Tolerance mm : + 0.05

Rated speed rpm : 500

Rated speed rpm : 980
rack travel mm : 9.35
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 58.5
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + 0.75
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000S. : + 8.0

LOW IDLE

Rated speed rpm : 375

Rack travel in mm : 4.40
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5

Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.10.97
Test oil : ISO 4113
Combination No. : 0 400 876 410
Injection pump
Pump designation : PES6A95D410RS2838
EP type number : 0 410 896 895
Governor
Governor design. : RSV450...1250A2C2263
: -6L
Governor no. : 0 420 232 589
Cust. part No. : F2NN-9A543-KA

Customer-spec. information
Customer : FNH-GEOTECH
Motor : 7.5L5
Power KW : 119.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250
Rack travel in mm : 10.80
Tolerance mm : ± 0.05
Del. quantity
cm3/1000 strokes : 95.5
Tolerance
cm3/1000 strokes : ± 1.0
Check tolerance
cm3/1000S. : ± 3.0
Speed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

Rated speed rpm : 450

Rack travel in mm : 5.80

Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 15.0

Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 4.5

Spread
Tolerance

cm3/1000 strokes : 5.5

Check tolerance
cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 700

Del. quantity
cm3/1000 strokes : 95.5

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 3.0

Spread
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 109.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1293
rack travel mm : 9.80

Rated speed rpm : 1368
Tolerance 1/min : \pm 7
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1475

Rated speed rpm : 1294
rack travel mm : 9.80

Rated speed rpm : 1369
Tolerance 1/min : \pm 7
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1475

Rated speed rpm : 1295
rack travel mm : 9.80

Rated speed rpm : 1370
Tolerance 1/min : \pm 7
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1475

Rated speed rpm : 1296
rack travel mm : 9.80

Rated speed rpm : 1371
Tolerance 1/min : \pm 7
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1475

Rated speed rpm : 1297
rack travel mm : 9.80

Rated speed rpm : 1372
Tolerance 1/min : \pm 7
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1475

Rated speed rpm : 1298
rack travel mm : 9.80

Rated speed rpm : 1373
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1475

LOW IDLE

control lever
position degree : 80.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 19.50

Testing:

Rated speed rpm : 450
rack travel mm : 5.80
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 540
Tolerance 1/min : \pm 30

SET IDLE AUXILIARY SPRING

Rated speed rpm : 540
rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 10.80
Tolerance mm : \pm 0.05

Rated speed rpm : 600

rack travel mm : 10.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 10.80
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.30
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 310
rack travel mm : 9.00
Tolerance mm : \pm 0.20

Pressure hPa : 475
rack travel mm : 10.20
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 102.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 61.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 18.30
Del. quantity
cm³/1000 strokes : 193.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 450

Rack travel in mm : 5.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.10.97
Test oil : ISO 4113
Combination No. : 0 400 876 421
Injection pump
Pump designation : PES6A95D320RS2848
EP type number : 0 410 896 892
Governor
Governor design. : RSV500...1100A5C2269
: R
Governor no. : 0 420 233 338
Cust. part No. :

Customer-spec. information

Customer : VALMET
Motor : 634 DS
Power KW : 140.0

TEST BENCH REQUIREMENTS

Inlet line : 2.3
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Beginning of delivery differende
and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 5.00

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 14.05
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 133.0

Tolerance	
cm3/1000 strokes	: +- 1.0
<hr/>	
Check tolerance	
cm3/1000S.	: +- 3.0
<hr/>	
Spreed	
<hr/>	
Tolerance	
cm3/1000 strokes	: 3.5
<hr/>	
Check tolerance	
cm3/1000S.	: 8.0
<hr/>	
Rated speed rpm	: 500
Rack travel in mm	: 4.30
Tolerance mm	: +- 0.10
Del. quantity	
cm3/1000 strokes	: 21.0
Tolerance	
cm3/1000 strokes	: +- 3.0
Check tolerance	
cm3/1000S.	: +- 4.5
Spreed	
Tolerance	
cm3/1000 strokes	: 5.5
Check tolerance	
cm3/1000S.	: 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever	
position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: +- 0.20
governor spring	
pre-tension	
click setting x	: 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1100
Aneroid pressure	
hPa	: -
Del. quantity	
cm3/1000 strokes	: 133.0

Tolerance	
cm3/1000 strokes	: +- 1.0
Check tolerance	
cm3/1000S.	: +- 3.0
Spreed	
Tolerance	
cm3/1000 strokes	: 3.5
Check tolerance	
cm3/1000S.	: 8.0

CONTROL LEVER

control lever	
position degree	: 99.0
tolerance degree	: +- 4.0

RATED SPEED

rack travel mm	: 13.00
Rated speed rpm	: 1145
Tolerance 1/min	: +- 5

rack travel mm	: 4.00
Rated speed rpm	: 1225
Tolerance 1/min	: +- 15

rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1300

LOW IDLE

control lever	
position degree	: 74.0
tolerance degree	: +- 4.0

Setting point w/out bumper spring

Rated speed rpm	: 100
CRT mm min.	: > 19.50

Testing:

Rated speed rpm	: 500
rack travel mm	: 4.30
Tolerance mm	: +- 0.10

rack travel mm	: 2.00
Rated speed rpm	: 530
Tolerance 1/min	: +- 30

SET IDLE AUXILIARY SPRING

rack travel mm	: 2.00
----------------	--------

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 14.05
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 14.60
Tolerance mm : \pm 0.10

Rated speed rpm : 975
rack travel mm : 14.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 14.30
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.10
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 550
rack travel mm : 13.20
Tolerance mm : \pm 0.10

Pressure hPa : 655
rack travel mm : 13.90
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 137.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 103.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 205.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 500

Rack travel in mm : 4.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.10.97
Test oil : ISO 4113
Combination No. : 0 400 876 425
Injection pump
Pump designation : PES6A95D410RS2864
EP type number : 0 410 896 888
Governor
Governor design. : RSV400...1050A2C2263
: -7L
Governor no. : 0 420 232 606
Cust. part No. : 87 800 861

Customer-spec. information
Customer : FNH-GEOTECH
Motor : 7.5 L
Power KW : 149.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 8 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 800
Rack travel in mm : 14.10
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 151.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 650

Rack travel in mm : 4.50

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 800
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 151.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 98.0
tolerance degree : ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1078
rack travel mm : 11.70

Rated speed rpm : 1105
Tolerance 1/min : ± 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1250

Rated speed rpm : 1079
rack travel mm : 11.70

Rated speed rpm : 1106
Tolerance 1/min : ± 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1250

Rated speed rpm : 1080
rack travel mm : 11.70

Rated speed rpm : 1107
Tolerance 1/min : ± 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1250

Rated speed rpm : 1081
rack travel mm : 11.70

Rated speed rpm : 1108
Tolerance 1/min : ± 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1250

Rated speed rpm : 1082
rack travel mm : 11.70

Rated speed rpm : 1109
Tolerance 1/min : ± 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1250

Rated speed rpm : 1083
rack travel mm : 11.70

Rated speed rpm : 1110
Tolerance 1/min : ± 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 78.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 650
rack travel mm : 4.00
Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 650
rack travel mm : 4.50
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 740
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 800
rack travel mm : 14.10
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 14.15
Tolerance mm : ± 0.10

Rated speed rpm : 1030

rack travel mm : 11.90
Tolerance mm : ± 0.05

Rated speed rpm : 1030
rack travel mm : 12.70
Tolerance mm : ± 0.10

Rated speed rpm : 950
rack travel mm : 13.35
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 14.15
Tolerance mm : ± 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 7.80
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 775
rack travel mm : 13.50
Tolerance mm : ± 0.05

Pressure hPa : 520
rack travel mm : 11.10
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 70.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 20.00
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Rated speed rpm : 650

Rack travel in mm : 4.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.10.97
Test oil : ISO 4113

Combination No. : 0 400 876 430

Injection pump
Pump designation : PES6A95D410RS2864
EP type number : 0 410 896 888

Governor
Governor design. : RSV400...1050A0C2263
: -10L
Governor no. : 0 420 232 619

Cust. part No. : 87 800 862

Customer-spec. information
Customer : FNH-GEOTECH
Motor : P 396
Power KW : 142.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 15.20
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 154.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 450

Rack travel in mm : 5.60

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 15.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spread

Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1093
rack travel mm : 12.40

Rated speed rpm : 1158
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1270

Rated speed rpm : 1094
rack travel mm : 12.40

Rated speed rpm : 1159
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1270

Rated speed rpm : 1095
rack travel mm : 12.40

Rated speed rpm : 1160
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1270

Rated speed rpm : 1096
rack travel mm : 12.40

Rated speed rpm : 1161
Tolerance 1/min : + 5

rack travel mm : 4.00
rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1270

Rated speed rpm : 1097
rack travel mm : 12.40

Rated speed rpm : 1162
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1270

Rated speed rpm : 1098
rack travel mm : 12.40

Rated speed rpm : 1163
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1270

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 5.10
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 450
rack travel mm : 5.60
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 575
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 15.20
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 15.25
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
rack travel mm : 12.90
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 13.40
Tolerance mm : \pm 0.10

Rated speed rpm : 950
rack travel mm : 14.25
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 15.25
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.20
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 750
rack travel mm : 13.70
Tolerance mm : \pm 0.05

Pressure hPa : 500
rack travel mm : 11.80
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 76.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 163.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Rated speed rpm : 450
Rack travel in mm : 5.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.09.97
Test oil : ISO 4113

Combination No. : 0 402 066 713

Injection pump
Pump designation : PES6P110A120RS3357
EP type number : 0 412 016 754

Governor
Governor design. : RSV550...1100P2A677
Governor no. : 0 421 833 596

Cust. part No. : 3931957

Customer-spec. information

Customer : CDC
Motor : 6CTA ELITE
Power KW : 208.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 8.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.00

Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 195.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 550

Rack travel in mm : 6.40

Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 29.5

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 195.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 99.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.00
Rated speed rpm : 1195
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1285
Tolerance 1/min : + 5

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1460

rack travel mm : 4.00
Rated speed rpm : 1320
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 79.0
tolerance degree : + 4.0

Control lever difference
Grad : 20.0
tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 550
rack travel mm : 5.90
Tolerance mm : + 0.10

Rated speed rpm : 100
 CRT mm min. : < 19.00
 Testing:
 Rated speed rpm : 550
 rack travel mm : 6.40
 Tolerance mm : \pm 0.20

TORQUE CONTROL

Rated speed rpm : 1100
 rack travel mm : 13.00
 Tolerance mm : \pm 0.05

Rated speed rpm : 750
 rack travel mm : 13.50
 Tolerance mm : \pm 0.20

Rated speed rpm : 1050
 rack travel mm : 13.10
 Tolerance mm : \pm 0.20

Rated speed rpm : 950
 rack travel mm : 13.50
 Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
 Pressure hPa : 1500

Rated speed rpm : 600
 Pressure hPa : -
 rack travel mm : 11.50
 Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 600

Pressure hPa : 1150
 rack travel mm : 12.95
 Tolerance mm : \pm 0.20

Pressure hPa : 975
 rack travel mm : 12.15
 Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1500
 Rated speed rpm : 950
 Del. quantity
 cm³/1000 strokes : 212.0
 Tolerance
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000s. : \pm 5.0

Aneroid pressure

hPa : -
 Rated speed rpm : 600
 Del. quantity
 cm³/1000 strokes : 154.5
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000s. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 21.00
 Tolerance mm : \pm 0.50
 Del. quantity
 cm³/1000 strokes : 165.0
 Tolerance
 cm³/1000 strokes : \pm 20.0
 Check tolerance
 cm³/1000s. : \pm 25.0

LOW IDLE

Rated speed rpm : 550
 Rack travel in mm : 6.40
 Tolerance mm : \pm 0.20
 Del. quantity
 cm³/1000 strokes : 29.5
 Tolerance
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000s. : \pm 4.5
 Speed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000s. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.10.97
Test oil : ISO 4113

Combination No. : 0 402 076 817

Injection pump
Pump designation : PES6P120A720RS3367
EP type number : 0 412 026 788

Governor
Governor design. : RSV525...1000P2A640
Governor no. : 0 421 233 604

Cust. part No. : RE71286

Customer-spec. information
Customer : DEERE
Motor : 6081HT001
Power KW : 186.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

°NW after s.o.d. : 7.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack
travel : 14.00°
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.90
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 174.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 525

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1400

Del. quantity
cm³/1000 strokes : 174.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 89.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.80
Rated speed rpm : 1070

Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1115

Tolerance 1/min : \pm 5

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1200

rack travel mm : 4.00
Rated speed rpm : 1115

Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 525
rack travel mm : 4.50
Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 525
rack travel mm : 5.00
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.90
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 13.60
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1400

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.25
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 975
rack travel mm : 13.30
Tolerance mm : \pm 0.20

Pressure hPa : 830
rack travel mm : 12.60
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1400
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 193.5
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 168.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 525
Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.10.97
Test oil : ISO 4113

Combination No. : 0 402 776 823

Injection pump
Pump designation : PES6P120A720RS7382
EP type number : 0 412 726 943

Governor
Governor design. : RSV400...900P4A609
Governor no. : 0 421 833 494

Cust. part No. : RE64162

Customer-spec. information
Customer : DEERE
Motor : 6081 AF001
Power KW : 180.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 079

Inlet press. bar : 2.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende
and maximum rack
travel : 14.00
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.85
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 225.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850

Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 225.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 103.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.85
Rated speed rpm : 920
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 955
Tolerance 1/min : \pm 5

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1025

rack travel mm : 4.00
Rated speed rpm : 970
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 79.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.50
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 12.85
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100

Check
speed 1/min : > 80

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet